University News

Smt Sheila Kaul, Union Minister of State for Education, speaking on the occasion of laying the Foundation Stone of the New Guest House at Aligarh Muslim University Seen in the picture are (L to R) : Mrs S S Grewal, Education Secretary, Shri Saiyid Hamid, Vice-Chancellor and Prof Mohd Shabbir, Pro-Vice-Chancellor of the University

CLASSIFIED ADVERTISEMENTS

KARNATAK UNIVERSITY, DHARWAD

No KU BOA/ADVT/84/593 **Dated 19-1-1984**

ADVERTISEMENT

Applications in the prescribed form (seven sets) are invited for the following posts so as to reach the undersigned by Registered Post A D on or before **1-3-1984**

Number of posts, scales of pay with usual allowances as per University rules and reservations

Subject	Name of Post and Scales of Pay	Reservation	Name of the Dept
1 Linguistics	Reader (Rs 1200-1900)	S C	Institute of Kannada Studies, K U D
2 Kannada (Jaina Literature)	-do-	B C M	-do-

QUALIFICATIONS

Reader

Good academic record with a doctoral degree or equivalent published work Evidence of being actively engaged in (i) research or (ii) innovation in teaching methods or (iii) production of teachnng materials

About five years experience of teaching and/or research provided that atleast three of these years were as Lecturer or in an equivalent position

This condition may be relaxed in the case of candidates with outstanding research work

'**Good Academic Record**" means as under

(i) A candidate holding a Ph D degree should possess at least a second class Master's degree or

(ii) A candidate without a Ph D degree should possess a high second class Master's degree and second class in the Bachelor s degree, or

(iii) A candidate not possessing Ph D degree but possessing second class Master's degree should have obtained first class in the Bachelor s degree

Application forms can be obtained from the Director, Prasaranga, K U Dharwad, on payment of Rs 4/- per application, Rs 28/- per set (seven applications) in person or by sending a Crossed Demand Draft of Rs 28/- + Rs 2/- for postage payable to the Finance Officer, K U Dharwad

Knowledge of Kannada is Desirable

Appointment to the posts may be permanent depending upon the natutre of the vacancy and the requirements of the University In such cases, they will be on probation for one/two years according to the rules of the University

Candidates selected for the above posts, may be posted in the beginning or at a later date to work either at Dharwad or at any of the P G Centre(s) though the posts are shown as existing at a particular place at the time of advertisement

If candidates belonging to Scheduled Caste, Scheduled Tribes, Backward Tribes Backward Communities Backward Caste and other reserved categories are not available the said vacancies will be filled up in accordance with the latest Govt instructions in this behalf Applicant belonging to Scheduled Caste/Scheduled Tribe (Form-I) Backward Communities Backward Caste/Backward Tribes in (Form-2) and to the Special Group (Form-3) are required to produce a certificate in the **prescribed form issued by the authorities empowered** to issue such certificates in support of their claims along with their applications Such certificates should not have been issued **earlier than one year by the competent authorities** empowered to do so

In addition to the posts reserved for Scheduled Caste and Scheduled Tribe preference shall also be given to persons belonging to Scheduled Caste, Scheduled Tribe in respect of even the vacancies persons possess suitable qualifications

The entitlement of a person to be eligible for appointment against the quota "other Backward Classes shall be determined not just on the basis of a caste certificate but rather on the basis of a caste-cum-income certificate, which would include **income of his own** together with that of his parents and if either of the parent is dead, of his legal guardian

Age limit to apply for the said posts below 50 years

To count one academic year as one year teaching experience

Sympathetic view will be taken for recruitment of Physically handicapped persons for suitable appointments provided they fulfil the prescribed qualifications and conditions, subject to production of authentic certificate issued by the competent medical authorities

Instructions to the candidates

1 Canvassing directly or indirectly would disqualify the candidate
2 Incomplete applications are liable to be rejected
3 The number of posts specified above is subject to variation depending upon the needs of the University
4 It is open to the University to fill-up or not to any of the posts now advertised
5 Application fee once remitted to the University is not refundable under any circumstances Separate application along with enclosures is required to be submitted for each post One set of application cannot be considered for more than one post
6 No T A/D A will be admissible either for attending the interview or for joining the post if selected

REGISTRAR

UNIVERSITY OF DELHI

Advt No Estab IV/86/84
Dated the 3rd February, 1984

Applications are invited for the post of Controller of Examinations in the University

Scale of Pay Rs 1500-60-1800 100-2000

The post carries D A H R A , C C A and other allowances as admissible under the rules in force in the University from time to time

Qualifications

Essential A Second Class Master s degree and experience of conducting University Examinations and other allied work at the executive level for atleast 10 years and having record justifying entrusting of confidential work

Desirable Experience of University administration and familiarity with the working of University bodies and institutions

The prescribed application form can be had from the Information Section of the University either personally or by sending a self addressed envelope with postage stamps worth Rs 3 45 p to the undersigned

Selected candidate will be required to produce original documents relating to their age, qualifications, experience, etc before joining the appointment

Applications, accompanied by attested copies of degrees and other certificates etc should reach the undersigned not later than **29-2-1984**

Note 1 Relaxation of any of the qualifications may be made in exceptional cases on the recommendation of the Selection Committee

2 Canvassing in any form by or on behalf of the candidate will disqualify

Madan Mohan
REGISTRAR

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Editor : [illegible]

Seminar on Reservation Weaker Sections of Society

Reservation for the weaker sections of society in educational institutions has drawn attention of politicians and academics for quite some time. Indeed, Article 46 of the Indian Constitution enjoins that "State shall promote with special care the educational and economic interests of the weaker sections of the people and in particular of the scheduled castes and scheduled tribes and shall protect them from social injustice and all forms of exploitation" This singnifies the deep commitment of the Nation to take special care for them In this context, at the instance of Visva Bharati, the Association of Indian Universities at its meeting held in Kanpur considered the question of reservation of seats for weaker sections of society in Indian universities After considerable discussion, it was thought proper to devote more time to this important issue It was therefore suggested that zonal seminars be held to discuss the matter further before formulating any guidelines.

Accordingly, seminars were organised in Santiniketan and Pune The Seminar for Southern Universities was held at Tamil University, Thanjavur on December 14 and 15, 1983 Wide ranging discussions were held The position and status of tribes and scheduled castes in Punjab, Tamilnadu, Kerala, Karnataka, Andhra Pradesh and Nagaland were discussed Hon'ble C Aranganayagam, the State Education Minister and Pro-Chancellor of Tamil University had sent his inaugural address as he could not come to Thanjavur

Shri P S. Habeeb Mohamed, VC, Kerala, Dr M Aram, VC, Gandhigram Rural Institute, Shri G B K Hooja, VC, Gurukula Kangri Shri T N Jayachandran, VC, Calicut, Prof S V Chittibabu, VC, Annamalai, Dr J S Grewal, VC, GNDU, Prof P V Indiresan, Director, IIT Madras and a number of academics from the neighbouring universities participated in the seminar The Association of Indian Universities was represented by its Joint Secretary, Shri Anjni Kumar Prof. V I. Subramoniam, Vice-Chancellor, Tamil University while welcoming the participants said that the university system has two models before it, namely, the reservation model and the non-reservation model followed in socialistic country It was for the seminar to suggest how best to tackle the problem He referred to the recent progress made in Tamilnadu for the development schemes for weaker sections of society and appreciated the continued assistance of the Chief Minister for organising different welfare schemes for the benefit of masses Prof Chittibabu, VC, Annamalai in his address referred to the continued efforts of the Tamilnadu in attracting the students of scheduled caste and scheduled tribe in large numbers for various academic programmes and the recent allocation of 150 crores for the nutritional meal schemes in the schools which had immensely helped the children of weaker sections in continuing their studies

Shri Anjni Kumar, while proposing a vote of than ks, said that after the four regional seminars have been conducted, there will be general discussions at the Annual Meeting of AIU to be held at Shillong to formulate the guidelines for achieving equality of all segments of the Indian population

The following resolutions were adopted by the Seminar:

(1) In the existing social, economic and political conditions, though caste based reservation is a practicable remedy, it should be reduced progressively after asses sing (a) the benefits enjoyed by each community/caste and (b) the courses and professions in which optimum benefits have been enjoyed by the reserved groups.

(2) In such courses where reservation leads to denial of entrance to candidates with adequate and required qualifications, and marks, the increase of the number of colleges/seats be considered by educational agencies.

(3) Since reservation in higher education should not affect the standards of education and training, steps should be immedia-

Prof S V Chittibabu, Vice-Chancellor, Annamalai University, addressing the seminar

which prepare the reserved students for entry into the colleges It is also recommended that (a) the provision of pre-primary schools improvement of the standard of primary, middle and high school education and (b) to organise such schools in areas, which are accessible to the reserved communities

(4) Since the goals of education is to provide better living conditions and improved economic well being to the reserved groups, the courses may be diversified to provide facilities to study such skills in which the community caste has traditionally specialised Such of the candidates from the non-reserved groups who desire to acquire such skills should also be encouraged to join such courses so that caste occupations may become a common wealth to all

(5) To improve the standard of educational achievements it is recommended that such of the students of the reserved category who secure higher marks in entrance tests to any course to secure selection in the open quota, should be given incentives say for instance by doubling their scholarship amount Care should be given to the first generation learners of the reserved groups

(6) Since transfer of information is effectively achieved by improved technologies and by the medium of education the schools and colleges should be provided with facilities for audio visual aids and to educate the reserved group in their mother tongue regional language

(7) Since growth of intelligence of children depends on pre-natal post-natal care of the mother and by providing nutritional and adequate food for the children welfare schemes should be implemented for the benefit of the reserved group by Governmental and voluntary agencies

(8) Cells for evaluation and monitoring be organised by the Governments and Universities with provision for close collaboration among themselves so that, ameliorative programmes for the socially under privileged can be effectively implemented Publication of annual reports should also be encouraged to inform the public

(9) Adequate funding of projects be made to survey the effectiveness of the ameliorative schemes and to locate lose ends and to identify causes of tension, to the agencies which have adequate expertise

(10) It is also urged that extension work in areas where reserved groups live should be undertaken by the Universities Colleges and if possible to celebrate a day as the day of integrating the socially under-privileged sections of the population with other communities

(11) Integrative schemes like the Nutritional Meal Scheme initiated by the Chief Minister of Tamilnadu which has prevented drop-outs in schools from the reserved sector be implemented, which in course of time will make reservation superfluous ☐

A view of the seminar

Prof. M.G.K. Menon Addresses Convocation of Karnatak University

Excerpts from the convocation delivered address by Prof M G K Menon, Member, Planning Commission, at the 34th convocation of the Karnatak University, Dharwad

"Those emerging from the portals of the University today, after completing one phase in their career-and at this point let me remind you that education never finishes but is a life-long process-will have around four decades of creative life ahead, which will cover the remaining part of this century and the first quarter of the next century and perhaps even beyond What is the advice that can be given, to enable you to deal with the challenges that you will face and to seize the opportunities that lie ahead ? For this we need to look in broad perspective at the world scene and more particularly at the national scene, as it is today, as also the manner in which changes have occurred over the past half a century

"Human society is a mixture of the old and the new It is basically conservative and sticks to past traditions and practices These are our roots It is, however, forced to change by pressure of circumstances and exogenous factors of which scientific development is the dominant It is important that we learn to develop new roots of value in the new conditions that keep emerging

"There is a great deal of work that anthropologists, psychologists, geneticists, evolutionary biologists, sociologists and others have to do for us to understand the motivations and loyalties, aspirations and fears which define the behaviour of individuals groups, nations and society These are endogenous factors within us They are of the greatest importance for they are responsible for our sense of values, the respect, affection or dislike in which we hold others, and our ability to co-operate on a wider basis

"But quite clearly, as far as exogenous factors are concerned, the principal motive force today is the advancement of science and technology Of this, I have no doubt

The Advent of Science

"Science has its origins in the ability to reason logically, which in turn is based on the evolution of the human brain This ability to reason logically, as also the abilities for general intelligent and co-ordinated manipulation of objects and to develop a sophisticated vocabulary, enabled humankind to become the most dominant and powerful species on earth When we look at the evolution of man, we see a gradual process, with some clear landmarks when new traits were acquired, this resulted in a transition to a new level of development The use of fire the Old Stone Age (with development of skills relating to the handling and shaping of materials, and of tool making), the New Stone Age (with primitive village agriculture, weaving and pottery), and the metal Ages of Copper Bronze and Iron, constituted some of the landmarks A few hundred years ago there occurred a very significant landmark namely the Scientific Revolution, and contemporaneously, the Industrial Revolution Since then we have witnessed the spectacular march of science and of technology, which have been coming together in an increasingly closer symbiotic relationship Spectacular though these developments have been over the past few hundred years, it is over the past half a century that there have been developments of such profound implications, and in so many different fields, that each one of these could have characterised an Age of humankind These developments have been taking place in nuclear science and technology, in space science and technology, in electronics, communication and information and in modern biology One can state that today we are living in the Age of the Atom, the Age of Space, the Age of Electronics, Communications and Information, and the Age of Biology, all rolled into one Never before has any human generation faced such profound changes taking place, and continuing to take place, with such rapidity It is essential that society learns to adapt itself to these new capabilities and knowledge, that advances in science have given us, if we have to avoid a major human crisis

"There are three aspects that I would like to stress at this point first, that a very large part of what we see around us, and the developments that have taken place are directly connected with the advances in science and technology, second, these advances will continue to take place and, therefore, we should be prepared for more significant changes arising from these, and third, I would like to dwell on the nature of the human condition and what should be done to ensure that these enormous powers given to humankind through advances in science and technology can be made use of for more meaningful development leading to happiness

Transportation

"In the field of transportation, from the animal-based systems of the pre-industrial revolution era, (which still form a considerable part of the transportation systems of our country today) we have moved steadily through the motive power provided by coal, oil and the use of steam and internal combustion engine, to the major automotive and rail transportation systems that now characterise a large part of the world A major step-forward, after the

Second World War, was the introduction of the jet engine, which has led to the present significant intercontinental traffic based on wide-bodied jet aircraft The resultant mass transportation has indeed made the world a small place physically, and has had, and will have, tremendous social consequences through the inter-mingling of communities The cause, or the exogenous factor, has arisen from science and technology, but the long range implications will be sociological

Communication and Information

"From the early periods characterized by physical movement of information by relatively slow modes of transportation (men used as runners, horses, road and rail systems), we have moved through telegraphy, telephony, the radio and television to satellite-based systems of the modern age Information transfer is through the movement of electrons and of electromagnetic radiation There has been a succession of revolutions, or indeed a continuing revolution, in the field of electronics underlying this area From the valve-based radio and television sets we moved into the area of solid state electronics after the Second World War Each decade thereafter saw a major transformation from the transistor to integrated circuits, to successively higher levels of integration through small-scale to medium-scale to large-scale and now to the very large-scale integrated circuits Electronics equipment has become smaller in weight and volume, requires less power, is more reliable has enormously greater capabilities and versatility, and costs much less for the performance it delivers These developments have resulted in the many apparently separate fields of computers, communications and space technology coming together in a mutually dependent and integrated manner

"There is now a continuous spectrum of computing capability from the hand-held calculators upto the large computers Large volume data can now be moved around over communications lines Communication is becoming increasingly digital and electronic in character With the developments of space technology and the availability of geo-stationary satellites, radio and television networking and telecommunications have now become possible over inter-continental distances This has resulted in instantaneous global communication for transmital of information and ideas Human aspirations are no longer confined to those of a small community It derives from what obtains elsewhere in the world It is thus that we live today in a world of electronics, communication and information These developments have profound sociological implications

The Nuclear Age

"The nuclear age dawned when humankind moved from energy measured in electron volts, characteristic of chemical reactions, which only involve atomic and molecular re-arrangements, to energies measured in millions of electron volts arising through transformation of mass into energy One cannot but emphasise that a factor of million is very large for a single step When the first atomic explosion took place at Alamogordo, the thought which came to the mind of Robert Oppenheimer, who was incharge of the project, was a passage from the Bhagavat Geeta "If the radiance of a thousand suns were to burst into the sky, that would be like the splendour of the Mighty One" and when he saw the sinister and gigantic cloud he was reminded of another line, "I am become Death, the shatterer of the worlds" indeed, how close to the truth was this reaction, as we know from developments since then We have come a long way in the almost four decades that have elapsed with the possibility of major contributions to electric power development to meet the energy demands of the world through nuclear reactors and the vision of what would be, in today's context, unlimited power, through thermonuclear fusion in the not too distant future.

The Space Age

"Humankind entered the Space Age with the launching of the first Sputnik by the Soviet Union in 1957 Since then there have been spectacular achievements, including the landing of man on the moon in the U S Apollo missions, the exploration of Mars, Jupiter, Saturn and Venus, a manmade object moving out from within the solar system into the outer reaches of space, reusable shuttle based satellite launches and the now regular application of space technology for tele-communications, television and remote sensing

The Age of Biology

"Man has probed deep to understand the living state at molecular and cellular levels These discoveries in the life sciences have led many to proclaim that this is the Age of Biology It was after the Second World War that, using the tools of X-ray crystallography, it became possible to determine the structures of complex biological molecules A profound discovery related to the structure of DNA and the genetic code Since then exciting work has continued over the past quarter of a century with a stream of understanding pouring out Techniques were developed for rapid analysis of complicated bio-molecules Amino acid sequences and nucleotide sequences can now be determined very rapidly The first gene was synthesised in 1964, but it is only during 1978-79 that it became possible partially to synthesise the genes responsible for the production of insulin and the human growth hormone This became possible with the discovery of enzymes capable of cutting DNA at precise sites, of enzymes capable of sealing the loose ends, and of those which could synthesise DNA from messenger RNA In 1979 it took two years to synthesise a gene with 120 nucleotides, and by 1981 the same job could be done by a machine in three days There are many exciting implications arising from this new area of genetic engineering Apart from already accomplished aspects such as the synthesis of insulin or of interferon, one has the possibility of identifying genes with specific characteristics which can then be introduced where required, for example, in agriculture, it may be possible to transfer nitrogen-fixing genes of certain bacteria to certain plants, as also introduce in a number of different crops specific genes responsible for improved yields and pest-resistance There are innumerable applications opening up in medical science and industry Biotechnologies born out of this new understanding and advances in modern biology are now poised for a major thrust

Other Areas of Science

"I have only dealt with some areas of spectacular advances in science and technology This is not meant to be a comprehensive account For example, I have not covered the new frontiers in chemistry, in oceanography and our understanding of the solid earth Great discoveries have been made recently relating to the micro-structure of matter and the fields and forces concerned, in particular there is a unified theory to cover electro-magnetic and weak interactions and we are probing for a grander unification to include the strong interactions One can continue with such an account of the spectacular march of science Apart from spectacular, there are a very large number of important, and often commonplace, elements that are based on scientific discoveries and their applications, which are part of daily life Thus, plastics, synthetics, the transistor radio etc are common the world over including the most remote areas There have been great advances in medical sciences with modern antibiotics and miracle drugs One can clearly see the impact of these in the reduction of death rates and increased expectancy of life all over the world, including the less developed countries It is this which has given rise to the steady increase in world population There have been great advances in the field of agriculture which has enabled food production to keep pace, to some extent, with the increase of population, this is as yet, without recourse to the spectacular developments in the new biotechnologies

All of what I have stated clearly bring out that the development of science over the past few hundred years, and more particularly, the spectacular discoveries and applications since the Second World War have transformed the world in radical fashion The fabric of our civilisation has already changed enormously in our own life time It is changing more rapidly, from year to year, and will continue to do so

The human condition

"One would have thought that with the knowledge, power and capabilities that are with us today, and which continue to grow as a result of advances in science and technology, the world would be, in some sense, an Utopia But the human condition that we see around us is far from this

The Nuclear Threat

"First, there is greater insecurity in the world than ever before Over the past decade the cumulative world military expenditure has mounted to something like 5,500 billion dollars Conflicts continue to be an essential component of human existence The nuclear stockpile in the world consists of around 50,000 weapons, some of which have yields a thousand times greater than the bomb that destroyed Hiroshima We are now aware that, apart from the immediate death of many hundreds of millions of people, and injuries to as many, in a nuclear war, through blast, fire and radiation, and the continuing highly hazardous radioactive fallout, there are phenomena earlier not visualized that could endanger the very survival of life on earth as we know it today, this is because of the enormous amount of soot arising from firestorms that would result from any nuclear exchange of around 300 megatons or larger This soot will spread on global scale, involving the troposphere and stratosphere, in the northern as well as southern hemisphere lowering temperatures significantly everywhere and cutting out light by a factor of a hundred thousand to a million, the result would be a very cold and dark surface of the earth, inhospitable to present life forms. It cannot be said that nuclear war will affect only those who are engaged in it as some would assume It is essential for all humankind to understand that a nuclear war is a global disaster, those responsible as well as innocent bystanders will all be affected This issue has been brought up and publicised at many forums, particularly in the developed countries A true appreciation of the nuclear volcano on which we are sitting, which might blow up at any moment, is very insignificantly appreciated in our country

An Unequal World

'The world we see around us is one of gross inequalities between nations and within nations It is terribly imbalanced in terms of income and consumption The richer countries with only a quarter of the world's population account for four-fifths of the world's output By and large, the developing countries have been, and continue to be, producers and exporters of primary raw materials for which the prices have always been determined and continue to be determined by the advanced countries They are, therefore, aware that they have to greatly step up endogenous activity to transform primary raw materials to semi-finished or finished products, this calls for sustained industrialisation At the Lima Conference organized by UNIDO in 1975 a target was set that the developing countries must attain a share of 25% of world industrial output by 2000 A D It is with this in mind that the developing countries have argued for a better climate for transfer of technology, and for international programmes that would support the endogenous efforts of the developing countries themselves to grow their scientific and technical capabilities With respect to the latter, Homi Bhabha had remarked "What the developed countries have and the underdeveloped lack is modern science and an economy based on modern technology The problem of developing the underdeveloped countries is therefore the problem of establishing modern science in them and transforming their economy to one based on modern science and technology"

"The developing countries have consistently demanded the creation of a new International Economic Order based on equity, sovereign equality, a full appreciation of the inter-dependence that now exists in the world, common interest and co-operation among all states, irrespective of their economic and social systems All that one sees around today, in terms of trade, commerce, financial arrangements and human attitudes are attempts to continue with past practices, for short-term gains of limited groups, communities or countries The world, which has become small physically as a result of modern transportation and communication, which is so highly interdependent which has been transformed so significantly in terms of capabilities and opportunities through advances in science and technology, will require new organisation forms and basic changes in human value systems Those who are well-off today, whether it be groups within countries, or as whole parts of world, will have to recognise that their future well-being will depend on improvement in the standards of those not so well-off What is called for is co-operation not confrontation?

"In a moving address to the Pontifical Academy of Sciences recently (12th Nov 1983), Pope John Paul II said "Peace is born not only from the elimination of hotbeds of war Even if all these latter were eliminated, others would inevitably appear, if injustice and oppression continue to govern the world The intention to direct science to the promotion of justice and peace demands a great love for humanity Every human virtue is a form of love This is the case in particular of justice, which is love of neighbour, of individuals, and of peoples Only the person who loves wants justice for the other person The person who does not love seeks only to obtain justice for himself"

"With regard to the glaring global inequalities that exist, one can go into great deal on what needs to be done such as embarking on global negotiations more aid from the developed to the developing countries, availability of funds on a concessional basis, better commodity pricing less protectionism by the developed countries in respect of products from the developing countries, easier and more equitable access to technology and so on These have been discussed at great length at many international forums and I shall not go into these here What is fundamental is a recognition of the need for a new framework and new attitudes

Science and Technology for Development

' When one considers science and technology, there are many aspects of special relevance to developing countries Here again one can go into great details but I shall not These would relate to the problems of population stabilisation, and enhancing food production using strategies which extend the potential based on present knowledge and techniques, and phasing in of new possibilities arising from the developments in modern biology, (in particular one would have to work towards energy-efficient high-yield agriculture) One of the crucial areas for the future relates to energy where the world has been passing through a crisis situation that drew attention, with a jolt, to the importance of energy as a prime requirement for life and development, the non-renewable nature of oil and thereafter of coal, on which we depend so significantly today, and the extent to which developing countries, including India, depend so significantly on non-commercial energies There can be no complacency with regard to the question of meeting the energy needs of the world and of developing countries, in particular There are major areas of health specially encountered in developing countries, such as communicable diseases, problems arising from malnutrition and insanitation and so on. There is need to work out strategies for rapid development in harmony with the environment All of these constitute the environment of developing countries, where major challenges exist, that demand scientific innovation and capabilities at the very frontiers of present knowledge and capability It is in finding solutions to such challenging problems, with deep motivation from within, that scientists are led to great discoveries

"However on an overall basis one encounters two major problem areas in the world today one—the threat of a nuclear holocaust, arising from the confrontation between the super powers, a situation which has its roots in mistrust and suspicion the other--the major global inequalities arising out of approaches rooted in the past based on narrow loyalties, greed and selfishness There are no solutions within the realm of science and technology for either of these two major problem areas Science and technology will continue to advance, as I have indicated earlier and we will need these advances to deal with many of the problems amenable to technical solutions But to deal with the two overall problem areas that I have indicated, what we need is, and I quote Prime Minister Smt Indira Gandhi "The mind has to put aside the fragmentary utilitarian approach, and to look anew at the earth, the matrix of human heritage Its problems are global and have to be so viewed This is possible only when man symbolically opens his hands in a gesture of fearlessness and sharing '

"I hope that in the life that lies ahead of all of you who are graduating from this University today, beginnings would be made for a more meaningful tomorrow, where mankind will acquire the wisdom to live in happiness together, and to benefit from the enormous powers acquired through the process of disciplined logical reasoning which has given rise to science " ☐

Planning of Technical Education for Future Development : Indian Perspective

Biman Sen*

Technical Education is an integral part of the total system of education which is responsible for development of human resources for socio-economic development of a country. To understand the problems related to the scientific planning of technical education for future development, it is necessary to consider certain basic questions and fundamental facts.

The first question to be considered is—"What is future?" Unless it is quantified in the time dimension, future' remains only an abstract concept indicating an event or phenomenon yet to happen or take place. Therefore, whenever a question of future development of any sector of human activity is considered, there is a need for indicating a fixed timeframe. While considering the future development of technical education, for longterm planning, one should consider a timeframe equivalent to the working life of an average technical person, which is roughly about forty years according to the existing situation.

The second question is that "what is future development"—in the context of technical education? Development is a very complex process involving all the sectors of human activities which are inter-linked and inter-dependent forming a closed system. Therefore, development of any single sector of human activity cannot be considered in isolation as the development of any particular sector has a direct or indirect impact on the other, which may be of positive or negative in nature. In view of this a balanced approach is necessary, while planning for development of any particular sector. As for example, development of technical education is very much dependent on techno-economic and industrial development of the country, which, in turn, is dependent on various other factors.

The third question which needs consideration is "What is meant by planning?" It is a complex exercise. It involves a series of decisions for future action, to be taken on the basis of certain information available not only on the area of development, but also on some information on the allied areas of activities. In addition, in some cases one has to take into consideration some predictable or projected information based on certain trends of development in other areas or elsewhere in the world. At a certain crucial stage of development, the predictable or projected information may be more relevant for planning than the information actually available, which may, however, serve as a base for evaluating the state of prevailing situation for determining precisely the gap between existing status and the final goal to be achieved. For scientific planning, one should have a clear objective and a definite goal to be reached within a timeframe determined for the purpose. Pandit Jawaharlal Nehru said "Planning is a continuous movement towards desired goals."

Scientific planning should lay down the priorities between various sectors of activities in a sequential manner with reference to ultimate objectives and goals keeping in view the process of balanced development.

For example, the main objective of agricultural development is to increase food production and the ultimate national goal is to become self-reliant in food. Short-term goal can be achieved, either by increasing production by bringing more and more land under cultivation or by increasing productivity through application of science and technology. If, the first option is adopted for achieving short-term goal, it can be achieved only by disturbing the ecological balance and by denuding forest wealth of the country which may cost the country dearly in the long run and ultimately the very objective may be defeated and the ultimate goal may not achieved at all. On the other hand if the second option is adopted it would need a sound industrial base and infrastructure to support agricultural development in a sustaining manner. In the long run, the second option will achieve the ultimate goal and objective. Unfortunately, so far, India, in this respect, had adopted the first option which has led to large scale soil erosion, flash floods and drought etc. Thus the country is now paying heavily for the mistake in planning in the past.

To achieve the ultimate objective and goal, there is a need for long-term planning (perspective planning) supported by short term action plans to bridge the gap between the prevailing situation and the ultimate goal in the shortest possible time. For this, continuous evaluation and monitoring for re-assessing the situation is essential to correct the draft, if any or to review the goal itself.

For scientific planning of technical education for future development, there is a need for studying the growth of technical education in its historical perspective.

Technical education owes its existence to the industrial revolution rather it is a byeproduct of

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Executive Director, International Educational Consortium industrial development In fact, it was started as an education system, specially devised for industrial workers and gradually assumed the present stature Thus, Technical education is a tailor-made educational system specially devised for industrial development It is a part of the total development process closely related to techno-economic environment Therefore, its development is influenced by longterm industrial and economic policies and goals, which in turn depend on the national security policy, and on foreign and technology policies etc Over and above, planning of technical education for future development cannot ignore the fast changing scientific and technological environment in the world and the national compulsion and constraints

Another factor that should be kept in mind is that the time gap between scientific discovery and technological development is vanishing very fast

Considering various factors if technical education has to serve its purpose it has to be tuned to the changing requirements of industrial situation created by technological changes which influences the production techniques and processes Therefore, the planners of technical education should have a clear perception of the future needs on the basis of national commitments, both internal and external, continuous study of the changing trends in the international situation and worldwide industrial and economic development

Scientifically speaking economic development should not be measured in the term of increased production, but be measured in the terms of increased productivity through continuous upgrading of technology, which can olny be achieved, by continuous upgrading of the education and training system responsible for developing the key resource namely, human resources

If we analyse, the present technological environment and its changing trends, two areas of technology show faster development than others one, because of the energy-crisis created during the past decade major efforts for technology up-grading are, at present devoted to development of energy-economising processes and alternative sources of energy specially development of renewable sources of energy The second area is electronics, which is responsible for a major technological revolution Computers and micro-processors have revolutionised entire production processes and their uses have extended from average household and a small industrial or business enterprises to running of most sophisticated process industry and big atomic power stations etc In fact, micro-processors will soon transform not only the entire production system, but also streamline, the infra-structures It may even revolutionise the entire educational system

India, cannot ignore the realities of today's technological environment and shut its doors anymore to the technological changes which are sweeping all over the developed world In fact, India has already opted for high technology for developing its industrial base and the infra-structure required for supporting it The technology policy declaration has given a clear green signal for this new approach to future development It has no option but to do so for mere survival in the fast changing global geopolitical and techno-economic situation, and in a world of competitive markets The present situation demands a high degree of national security consciousness and defence preparation This will need a highly sophisticated industrial base and other infra structures The country has already entered in a big way in the realm of highly sophisticated technology areas like aero space technology, nuclear and computer technology and other areas Within next ten years, unless India enters in a big way in the field of electronics with special reference to micro-processors and computers and other electronic control systems, the country's entire progress will stagnate and slide back towards technologically medieval age All these activities will need a massive expansion and support of the research and development system both at the level of academic institutions and technical establishments Such a R & D system cannot be built up or sustained without a sound system of forward looking technical and science education Rather, it may be correct to say development of a sound techno-scientific educational system with a futuristic outlook

The major feature of the sophisticated technology is that it has not only changed the production processes but it has also introduced basic changes in deployment of manpower High technology needs sound interdisciplinary group activities rather than a technical man working individually Such group activities normally include theoretical and experimental physicists, physical chemists electronic engineers metallurgists, mechanical engineers and professionals from many other diverse discipline depending on the areas of activities Today, thin line between the responsibilities and duties of scientists and technologists or engineers are vanishing very fast Even at the technicians level inter-disciplinary knowledge is becoming an essential requirement

If we analyse the fast changing trends of the technological environment we would notice certain new phenomena emerging which were hardly perceptible in the immediate past One thing is becoming clear In future, most of the manual skills will gradually be taken over by machines and the rate of obsolescence in technology will become faster and faster which will make replacement of machines a regular feature eventually In such circumstances maintenance of older machines may cost more in term of human labour and expenses than to obtain new machines

The foregoing analysis cleary establishes that no more development of technical education, which is responsible for supply of trained technical manpower can be based on linear projection of past experiences And there is a need for drastic change in the basic approach This will require thorough review of the existing situation and reorient it to suit the new situation Since the technological environment is changing towards group activities, the fundamental approach to planning of technical education should be based on education team building qoth at the degree and post-graduate levels with high degree of inter-disciplinary mobility—horizontally as well as vertically This will require break-down of the barrier between science and technology and also between the various existing disciplines under engineering or technology This will need drastic revision of curricula and syllabii, in the process of educational team building Users of the products of the technical education should be involved right from programming for better appreciation of the industrial and other technical needs at the future operational level Such team building will not only help to create conditions for harmonious development of the technical institutions and its products but will also help in developing faculty competence in a more rational manner, for better appreciation and understanding of the objectives and philosophy of educational programmes Such team building will require not only free flow of information and materials between producers and users of the technical education products but there should be greater mobility between faculty and technical specialists in technical establishments and industry for intellectual inter-action and for promotion of better understanding of the national problems

With the sophistication in technology, there has been tremendous explosion of knowledge and information, and such knowledge and information, are more than doubling within three to five years Education therefore cannot be any more a one time exercise ending with a single educational programme

For an effective and efficient technical education system, there should be a built-in mechanism in the system for continuing education, for upgrading and improvement of competence and knowledge of the technical personnel already engaged in various activities The continuing education programmes should be organised in close collaboration with the Industry and technical establishments In fact, an essential feature of the future development of technical education should be close collaboration between the technical institutions and the users' organisations at every stage of development

Since technical education is tailor made for industrial needs, it is necessary to have advance information regarding types and number of various categories of trained technical persons required by various establishments Therefore, continuous assessment of manpower needs for various development activities becomes an important task of the planners of technical education This is not an easy task, particulary, in a changing technological environment However, sophistication of technology needs broad based education A global assessment of technical manpower required can be easily arrived at if type of technology to be adopted or adapted is known

Since production of technical manpower needs long leadtime (it requires atleast six to seven years to produce a engineer/technologist to be usefully employed, about ten to twelve years to produce a research scientist or engineer and about twelve to fifteen years to produce a competent technical manager) it needs predictable information for projection of manpower requirements in the terms of type, quality and number, well in advance to draw up programmes and plans for development of technical education in proper perspective The impact of whatever is planned during seventh plan period, will be felt only in the first quarter of the 21st century, when the socio-economic situation will be quite different from today s thinking it may be un-recognizable in relation to the present situation

Considering various aspects of the problems related to the development of technical education for future development, it clearly emerges that educational programming will be complex in nature In view of changing socio-economic situation in future, professional engineers scientists, etc will have to share greater and greater social responsibility and ultimately they have to assume leadership of the communities Therefore, technical education programmes have to be based on much broader perspective than to produce persons with professional competence only In fact, realising the needs of the changing world, the international conferences like UNESCO, General Conference in 1976, had laid down certain basic guidelines for development of technical education programmes to serve the changing needs of the modern sophisticated techno-scientific society of 21st century when a professional person will have to assume both social and moral leadership of a global society

To serve the purpose, there is a need for thorough-reorientation of the curricula and syllabii of the technical courses These courses have to be broad-based, flexible and susceptible to continuous changes with the fast changing requirements of time Therefore, the programming should have some built in mechanism for innovation and provision for exposure of the students to actual industrial and technical environment prevailing outside the institutions through the process of something like practice schools or attachment with some technical establishments as provided in the educational programmes of the Birla Institute of Technology and Science, Pilani For this purpose, technical education programme should adopt modular system

Technical education planners should keep in mind that with greater and greater sophistication of technology knowledge of miniaturisation, computerisation of information its application and retrieval, new materials, economisation of energy consumption, alternative renewable sources of energy, application of bio-technics and genetic engineering etc should be built in the educational programmes of technical courses at degree level Moreover, electronics and communication will be the discipline, the bed-rock on which, all future technology will depend Therefore, in future, without a basic knowledge of electronics, no human being will be able to function, not to speak of professionals, like engineers, scientists, doctors etc In view of this basic electronics has to be the core component of all technical education at degree level This will need strengthening of the study of fundamental sciences and mathematics In addition, substantial doses of social sciences and humanities study needs to be incorporated in technical education programmes There should also be greater inter-action between various branches of education to humanise the professionals, on one hand and on the other make people, at large aware of the environment in which they will live in the 21st century This will also help to achieve the dual objective of education, that is to provide individually with the basic tools to develop their personality and also to prepare them for entering into the world of work with self confidence and competence thus assisting an individual to develop the spirit of adventure and entrepreneurship For development of technical education in proper perspective there is a need for an efficient monitoring and evaluation system at all levels of planning with a view to correct the drift, if any, from the objective and goal or to modify the very objective on the basis of experiences

During recent years there has been a widespread tendency to draw a line between rural development and general development process forgetting that rural development is a part of the total development process and it cannot be considered in the isolation Any attempt to do so, will distort the total picture of development This is exactly what happened in Indian planning As a result, after thirty years of planning we have remained, one of the poorest countries of the world Unfortunately it has penetrated in the field of technical education also As science and technology are universal and they do not differentiate between countries or areas, similarly technical education which is a product of science and technology, should not differentiate between rural and urban and distort the educational system to suit a very short term requirement What is actually needed is to inculcate in every individual the technique of transfer of learning so that he can reorient himself according to a particular situation which he may have to face during his working life

It is hoped that every one will agree that the satellite communication or solar energy utilisation programmes etc will benefit all irrespective of location either in rural or urban areas For their development and maintenance can there be a separate technology— one for general and other for rural? If not, can the manpower required for development and maintenance of them be different? Therefore is it advisable to distinguish rural and general development? When all of us know that the artificial physical barrier between rural and urban areas is going to vanish with the growth of technology and science why then, separate out rural development from the general?

Besides all that has been stated, there is a need to settle another important and vital issue That is what should be the duration of technical courses, specially at the degree level? One should not forget that evolving an educational programme is not a mathematical or statistical exercise but, has to satisfy specific objectives The duration of a technical course is therefore, related to this objective and nothing else Education, being an integrated system, the duration of degree course in any technical subject will depend not only on the objective to be attained, but also on the efficiency of the higher secondary education, the products of which are the input of any technical degree course In the past, the major objective for the degree course was to prepare people for routine production (based on foreign knowhow) and mainly maintenance oriented jobs and when the education system for input to a degree course in engineering/technology was 10 years +2 years of intermediate education The duration of the engineering courses used to be mainly 4 years (some cases 3 years) When the eleven years school education system was introduced, on the recommendation of the All India Council for Technical Education, most of the States adopted a new system of five-years integrated technical degree course The word 'integrated' is very significant In recent years, when the school education system was reoriented to 10 years plus 2 years of higher secondary School education adopted on the recommendations of the Education Commission, the duration of the engineering/technology courses at the degree level was, on mathematical calculation reduced to four years in place of five The question is—Is it a wise decision? The evaluation of the present four year courses in relation to the objective to be achieved will answer the question and present a clear picture One should not forget that there has been a drastic change in the objective to be achieved by the degree course during the last three years and it is changing faster in terms of functions and job requirements of an engineer or technologist In addition to this there has been a tremendous explosion of knowledge and information during the last decades and will continue in future because of gradual transformation of the production techniques etc due to introduction of computers and microprocessors, basic knowledge and information required for a graduate in technical subject will be much more than in the past Therefore it is high time that the existing degree programmes are critically reviewed in all its aspects This task needs to be completed before the seventh plan period starts

Educational planners and administrators who are responsible for planning of technical education for seventh plan, should keep in mind, that tinkering with any technical education programme both at macro and micro level planning could no more serve any purpose for the future development It needs a complete reorientation of thinking and approach in evolving worthwhile development programmes for technical education to meet the formidable challenges of the future ☐

[Paper presented at the XIII Annual Convention of the Indian Society for Technical Education]

Marathwada Organises Symposium on the Role and Significance of Literature in FLT in India

The Department of Foreign Languages of Marathwada University hosted an all India University Grants Commission Symposium on "The Role and Significance of Literature in FLT (Foreign Language Teaching) in India' from 21-24 December 1983 It covered the themes such as the need for including a study of literature, the role and the need of the appreciation of of literary texts from the country concerned for the Indian class room, the stage and level at which the literature should be introduced, the significance of literature in the process of language learning and the evaluation of the materials produced in India The main aim of the symposium was to evolve a strategy for language teaching in different courses in Indian Universities

The symposium which was a part of U G C 's inservice training programme for the teachers of different foreign languages was inaugurated by Dr R N Srivastava Professor and Head, Department of Linguistics, Delhi University, Delhi Dr J P Dimri Professor and Head Department of Russian, C I E F L, Hyderabad, presided and Justice M P Kanade, Vice-Chancellor welcomed the delegates representing Russian German Arabic, Persian, Bahasa-Indonesia, Spanish, Vietnamese Serbo-Crotian and Polish

In all about 50 teachers participated in the symposium and 3[illegible] papers were presented

Dr R N Srivastava underlined the need for production of indigeneous materials for teaching foreign languages in India He emphasised the role of FLT in the present stage of growth in India Dr J P Dimri analysed the materials produced so far in Russian in India and was of the view that the materials to be produced needs to be linked with the aims and objectives of the FLT in India Dr (Ms) Sabra Habib of Lucknow University, in her valedictory address, focussed on the need for text books for functional/specific courses while Dr R S Bagga, of JNU the co-author of the *first text book in Russian* based on the use of mother-tongue (Hindi) and English, stressed the fact that the mother-tongue of the learner should be accorded a significant place in the methodology of teaching a foreign languag

The following Resolutions were adopted in the valedictory function

"We the teachers of foreign languages in various Indian Universities and institutions, who gathered here for an all India Symposium on "The Role and Significance of Literature in FLT in India', have also reviewed the role and significance of Foreign language teaching in India We are of the opinion that in view of the coming closer of the people of the world in different fields like culture, education science and trade, the teaching learning of foreign language has assumed a new dimension Since our country has come to play a leading role in promoting such closeness and understanding it is only natural that foreign language teaching learning should find a special place in our education Besides, the teaching learning of foreign languages will help us as was underlined by our Prime Minister, Mrs Gandhi in her address to the NAMEDIA conference recently, in diversifying the sources of our knowledge and information which are presently heavily dependent on only English Language We, therefore strongly recommend that

(1) the significance of foreign language teaching/learning should be clearly defined from both pedagogical and socio-political point of view,

(2) the function of foreign languages vis-a-vis various Indian languages should also be defined clearly and there should be greater interaction between foreign language teaching departments and departments of Indian languages which teach them as foreign languages,

(3) not only should existing departments of foreign languages be strengthened through, among others, upgradation and expansion of faculty positions but also increased facilities should be provided for introducing these at the school level as well,

(4) the U G C should have an independent panel for the foreign languages,

(5) the U G C should ensure that the native speaker under cultural exchange programmes should be assigned only to the University wherever there is an Indian teacher working,

(6) the U G C should encourage the materials production in the form of text books, anthalogies etc, by the Indian teachers by giving liberal grants for the purposes,

(7) the U G C should encourage the national symposiums conferences etc, in the foreign language teaching in India

(8) the U G C should implement the revelutions decisions and recommendations of different all India conferences, symposia etc, held so far,

(9) the U G C should have a central cell located in a University/Institute which should ensure the import and distribution of text-books in different of text books in different languages to different course of teaching in India (At present there is no single agency which can procure books and reading materials in Arabic, German, Russian, Persian, Vietnamese, Italian, Japanese and Serbo-Crotian etc ,

(10) the U G C should direct the universities that they should

revise and update their syllabi every three years and the new material be included in the courses,

(ii) in the interest of all round development of foreign languages as a discipline the U G C should ensure that there are independent and separate Departments of Foreign Languages consisting of all the foreign languages taught and wherever each language is developed the universities should be asked to have a separate department for every language

With a view to achieving these aims we resolve that an all India Forum for Foreign Language teachers including those teaching English and Indian languages as foreign languages, be founded at the earliest ’

Karnatak Varsity's oriental conference memorial lectures

Dr K Satchidananda Murty, Professor of Philosophy and Ex-Vice-Chancellor Sri Venkateswara University, Tirupati delivered the 28th All-India Oriental Conference Memorial Lectures on ‘The Philosophy of the Mahabharata on 12th January 1984, under the auspices of the Department of Philosophy and the Prasaranga, Karnatak University, Dharwad

In the course of the lectures Professor Murty explored the philosophical treatment of Dharma, Moksa and Adhyatma—the three principal themes in the Mahabharata Defining the concept of Dharma, he pointed out that it was the founding principle of the moral and spiritual life of man according to the Mahabharata and upon this alone rested the social and cultural ethics of the people Moksa being the *Summum bonum* of human life in the Mahabharata, there was an elaborate exploration of the means of realization of it along side a systematic metaphysics of the ultimate Reality, the Adhyatma It is the latter, the metaphysics of the Adhyatma which is the grand finale of the epic which is popularly characterized as a text on the glorification of the Lord, Srikrsna

Professor Krishnamoorthy who presided over the lectures pointed out the importance of a philosophical understanding of the epic At the begining of the lecture series Prof L C Mullatti welcomed the Guest and the audience After the final lecture, he reviewed the lectures and elaborated on the critical perespective in which the philosophical themes of the Mahabharata would be presented so that a proper understanding of the epic themes could be achieved by students of contemporary thought

Dr V N Deshpande, of the Dept of Philosophy proposed a vote of thanks

Cochin University's programme for training candidates for all India services

The State Government of Kerala has approved a scheme of the University of Cochin to set up a state-wide network of training centres to train candidates for recruitment to the various All India Services, Banking Services, and other public and private sector services The scheme was prepared by the University at the instance of the State Planning Board

The basic objective of the scheme is to give orientation and training to candidates (i) to answer objective type tests, (ii) to participate in group discussions, (iii) to face personal interviews, and (iv) to strengthen their ability in spoken English The scope of the programme will be expanded in due course to cover a large range of services and selection procedures The proposed training will considerably improve and widen the employment and career opportunities of the educated young men and women in the State

The scheme will be implemented by the University through its School of Management Studies which will administer the programme acting as the State Level Centre for Training Services All first-grade colleges and such other institutions in the State will be helped to establish Unit Level Training Centres to carry out the objectives of the programme Suitable fees will be charged from the candidates with a view to make the entire programme self-supporting

Language laboratory at GRI

A language laboratory has been set up at Gandhigram Rural Institute (Deemed University) by the Faculty of English and Foreign Languages The laboratory was inaugurated by Dr Velayudhan, Director, Regional Institute of English, Banglore on 21st January 1984 with the Vice-Chancellor, Dr M Aram in the chair

In his presidential address, Dr M Aram, emphasised the need for a language laboratory to help students improve their skills in spoken and Communicative English He hailed the commissioning of the laboratory as one of the milestones in the growth of the University Elaborating he pointed out that the laboratory would be open not only to students and teachers of the University but also to elementary and high school teachers in the nearby environs of Gandhigram

In his inaugural address, Dr Velayudhan remarked that the installation of a language laboratory would go a long way in improving the speech habits of the learners Deliberating on the various forms of English he opined that ‘intelligibility’ should be taken as the criterion for any ‘speech communication’ He added that the gadgets in the language laboratory could only supplement the teacher in any language teaching programme but not supplant him

A teachers' association with a difference

An association of Physics Teachers belonging to the Universities and affiliated colleges in the Vidarbha region of Maharashtra formed sometime ago aims to improve the course contents at various levels and also is determined to improve the interaction with the students community in general and talented students in particular

To achieve its goal the Association arranged for the second consecutive year, a students seminar of 29th Jan, 1984, at Nagpur, Akola, Amravati and Ballarpur, in which about 300 students from undergraduate classes participated This type of students seminar provides a common platform for talented, and inquisitive students from various colleges to openly discuss some selected topics in the presence of expert teachers This seminar is a regular activity of the Association and helps to identify and encourage the talented students from various colleges The students identified from the seminar are awarded some incentives prizes also

Another activity which this Association is regularly arranging for the benefit of the students is a "*Talent Hunt* Examination' which is also held every year

Seminar on English for commerce teachers

While delivering the valedictory address on 22nd January 1984 at the end of eight-day seminar sponsored by UGC on English for Commerce Teachers held at Shri J B Thacker Commerce College Shree Manohar Sinhji Jadeja, Minister for Civil Supply and Health, Govt of Gujarat said Improvement in teaching of English in Gujarat as well as in India, is the responsibility of society as a whole and not of English teachers only ".

He said English, being an international language, must be taught perfectly Our worthy Prime Minister had already expressed her concern about the deteriorating standards of English in India In Gujarat the standard of English was at the bottom in the 60's and 70's but the present Govt has taken steps to improve it English is a window to the World and so we must have perfect knowledge so that we can compete with the world in science & technology as well as in medicine

32 English lecturers from Gujarat, Saurastra, Bhavanagar and one from S N D T University participated in the seminar

President of the P E Society Shri Ramjibhai Thackker said that this seminar would help the students in the best way as the teachers who have come over here will benefit by attending the seminar for eight days The Director of this seminar Dr Subhash Jain, said this seminar will show how best one can teach English to commerce students in an easy way

Workshop to revise B Ed. syllabuses

More than forty senior teacher educators attended a workshop to revise the B Ed. syllabuses of the Agra, Meerut, Dayal Bagh and Aligarh Muslim Universities The workshop conducted by the Department of Teacher Education (DTE) was held at Meerut from November 7-11, 1983

The workshop recommended changes in the existing B Ed syllabuses based on the 'NCTE Curriculum—a Framework' The changes suggested were in the areas of Pedagogical courses, methods and techniques of evaluation concept of content-cum-methodology practise teaching SUPW and working with community A report based on these is under preparation and will soon be circulated to the concerned colleges of education and university education departments It will finally be placed before the Boards of Studies in Education for approval and implementation by these universities

(Courtesy NCERT Newsletter)

Ayurvedic seminar on skin diseases

A three-day Seminar on ' Skin Diseases" sponsored by the Institute for Post Graduate Teaching & Research of Gujarat Ayurved University will be held in February/March-1984 at Jamnagar

This is the first institution of its kind in India established in 1956 with a view to impart post-graduate education to Ayurvedic Scholars More than 500 Scholars have undergone training & obtained Postgraduate degrees from this institution during the last 25 years

This all India level Seminar will be attended by leading Vaidyas, Professors & Experts from different parts of the country Nearly 300 delegates are expected to participate in this Seminar

The Seminar is being organised in the context of the Government plan for eradication of Leprosy

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Education Minister, Mrs. Sheila Kaul, Visits AMU

The foundation stone of a new guest house of the Aligarh Muslim University was laid by Mrs Sheila Kaul, Union Minister of State for Education, Culture and Social Welfare, on January 23, 1984

Addressing the members of staff and students, Mrs Kaul emphasised the importance of the role played by the Central Universities and said that these Universities should be a model for other institutions of higher education She was happy to note that the AMU was moving in the right direction

Speaking on this occasion, the Vice-Chancellor, Mr Saiyid Hamid expressed his gratitude to the Minister for the kind attention she was paying to the needs of the University

Mrs Kaul's busy schedule at AMU included a visit to the AMU Women's College, Sarojini Naidu Hall University Polytechnic, Women's Polytechnic, Sir Syed's Tomb, Maulana Azad Library and the Students' Union

At the University Polytechnic Mrs Kaul laid the foundation stone of workshop Bays

Mrs Kaul was accorded a grand reception at the AMU Students' Union She was enrolled as a Life Member of the Union amidst thunderous applause

Research Work at IITs

Answering a question in the Lok Sabha on 15-12-1983 Smt Shiela Kaul Minister of State in the Ministry of Education and Social Welfare mentioned that all the academic departments and inter-disciplinary centres of research in all the five Indian Institutes of Technology (located at Bombay, Delhi, Kanpur, Kharagpur and Madras) were engaged in research The major areas of research in each of these five IITs were as follows

Indian Institute of Technology, Madras

Structural analysis, Finite element techniques Tribology Lasers Fibre-optic communications Signal controls, Power Electronics Microprocessors and related areas, Thermal sciences Turbomachines Power metallurgy, Super alloys, Particle Technology Chemical process development Bio-sciences, Alternative sources of energy Bio gas Material science, Optics

Indian Institute of Technology, Delhi

Finite Element Applications and Computer Aided Design Experimental Stress Analysis Agro-Chemical Engineering Digital Signal Processing Microprocessors and related areas Experimental and Theoretical Solid State Physics, Plasma Physics, Laser Spectroscopy and Technology Microelectronics Signal Processing Display Systems for Radar and Sonar Storm Surege Prediction, Air Pollution Modelling Bioconversion Technology-Feedstocks and Fuels Rehabilitation Engineering Fibre and Polymer Science Lubrication and Energy Conservation Solid State Electronic materials and Devices, Polymer Science and Technology

Indian Institute of Technology, Bombay

Material Science Cryogenic Engineering Energy Systems, Laser System Off-shore Engineering

Indian Institute of Technology, Kanpur

Aircraft Structures Mechanics of Aerospace Vehicles Petroleum Engineering and Natural Products Computer Aided Design, Solar Energy Geotechnical Engineering Biomechanics Biomathematics Environmental Pollution Industrial and Management Engineering Material Science Process Metallurgy Ceramics Engineering Solid State Physics and Crystallography

Indian Institute of Technology, Kharagpur

Aircraft Design Water Management of Field Crops Biofertilisation and Slow Release Fertilisers Urban Pollution Problems and Determination of Land Uses, Development of Catalysts Bio conversion technology and biogas production Membrane Plate and Shell Analysis, Water and Waste Water Treatment, Model Studies, in Seivers and on Tidal Power Generation, Microprocessor-based Devices and control systems, Unconventional methods of electrical power generation Fibre optics communication systems Computer-aided modelling and design Remote sensing and natural resources, Thermal stresses in Nuclear-Reactor Fuel Rods *Structural Design and Analysis* of Ships Development of Material for Solar Energy Conversion Cryogenic Food Freezing, Rice Milling and Paddy Parboiling Electromagnetic Scattering from complex targets Relamation of Waste Rubber cryogrinding

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Vocationalisation in USSR

There are about 7,500 vocational schools in the Soviet Union which turn out four million vocationally trained boys and girls every year, according to a report on secondary vocational education in the USSR This report is the outcome of the visit of an Indian delegation to the Soviet Union, led by Professor C S Jha, Indian Education Adviser (Technical) The other members of the delegation were —Mr P K Patnaik Joint Secretary (Schools) in the Union Ministry of Education & Culture, Mr S Venkataramani, Director General of Employment and Training and Joint Secretary in the Union Ministry of Labour, Prof Arun K Mishra, Head of NCERT's Vocationalisation of Education Unit and Mr K M Gedam, Director (Training) in the Maharashtra Directorate of Technical Training

Of the total of 7,500 vocational schools there are about 2000 rural vocational schools with an enrolment of nearly one million students, says the report These schools are fully equipped with land and machines including motor vehicles and cover a variety of trades both traditional and modern

These vocational schools keep a close liaison with industries and are run in close co-operation with the base enterprises like railways, automobile factories, agricultural farms etc

The delegation which visited several schools found that they were all well-equipped In USSR it is the vocational education system which imparts general education and not *vice-versa* In direct contrast to what obtains in India the USSR system does not produce a large number of students for entering college Though students can enter the college on the basis of their merit nearly 90% of the students prefer to take up jobs at this stage

The products of the vocational schools are enrolled on the basis of assured employment at the base enterprises or in their area of specialisation The enterprise provide information about manpower needs with various skills at least three years in advance The training is imparted as per the requirements of the employer and in close connection with the productive sector The situation however is entirely different in India One of the objectives of vocationalisation in India is to generate self-employment, says the report

(*Courtesy* NCERT Newsletter)

Diploma in Archival Science at Gujarat Vidyapith

The Gujarat Vidyapith has from this year instituted a new diploma course in Archival Science along with an archival cell with the cooperation of the Department of Archives of the Government of Gujarat The course consists of five major studies

(1) Archives Administration (2) Record Management (3) Conservation, (4) Archival Library System and Information Science, (5) Reading and Interpretation of documents

Gujarat State has extensive Record Repositories at District and Taluka levels All these are short of trained personnel The State Government had deputed some of its employees of the Archives department to undergo training under this course along with other students

The Vidyapith library has fullfledged Reprography unit and Micro-filming & Micro Reader facilities, in addition to fumigation chamber & Audio-visual equipments Prof Ramlal Parikh of the Gujarat Vidyapith and the member of the Indian Historical Record Commission directs this course along with Dr Resesh Jamindar who is a member of the Regional Record survey committee of the state Archives

MPS implemented at Sardar Patel University

Sardar Patel University, Vallabh Vidyanagar (Gujarat) has implemented the Merit Promotion Scheme (MPS) and necessary steps are being taken in this regard A Reader has been promoted as a professor and few other promotions are expected to follow

Gauhati University creates Gurunanak Chair

The Gauhati University created a Chair in the name of the Great Saint and Philosopher GURUNANAK II in the line of a similar chair created in the name of the great Assamese Saint Sree Sankara Deva in the Punjabi University, Patiala The purpose of both the chairs is to make research studies on the philosophy and literatures of the great saints The Guru Nanak chair of Gauhati University could not be filled up so long for want of suitable person Recently a scholar from Panjab was selected

Nature and environment conservation society formed

Keeping in view the importance of Nature and Environment and their conservation more than 130 scientists of the Punjab Agricultural University, have formed a society named 'Indian Society of Nature and Environment'

The aims and objectives of the Society are to create awareness among general public regarding the importance of Nature and its conservation to undertake activities against deterioration of the environment to emphasize the importance of judicious use of natural resources, to conserve the vanishing and endangered species of plants and animals and to provide a thought-provoking and action-oriented forum for the amateur and professional naturalists and environmentalists

To fulfil these objectives, the society shall also arrange lectures seminars, discussions, exhibitions concerning nature and environment and publish popular and scientific articles on the conservation of fauna and flora

GNDU's new hostel inaugurated

Mr Raghunandan Lal Bhatia, Member of Parliament inaugurated a four-storeyed Block of Girls Hostel of the Guru Nanak Dev University Amritsar This block costing Rs 13 24 lacs will add 48 rooms to the existing 188-room Girls' Hostel

Speaking on the occasion Mr Bhatia said that the Guru Nanak Dev University would pay special attention towards applied science and technology

Coaching classes for SC/ST at Sukhadia Varsity

Sukhadia University, through the Directorate of Correspondence Courses, has started pre-coaching classes for SC/ST students appearing at various competitive examinations The State Government has given financial aid for training programme

Small Family— Nation's Survival

A seminar on "Small Family-Nation's Survival" by Citizen's Council of Ahmedabad in co-operation with Gujarat Vidyapith was held on 8th January, 1984 in the Gujarat Vidyapith Prof Ramlal Parikh Vice-Chancellor presided over the inaugural session of the Seminar It was inaugurated by the Union Health Minister, Shri Shankaranand Shri S P Mittal (M P Rajya Sabha), Chairman of the Indian Parliamentarian's Association for Population & Development, was the Chief Guest

An exhibition of books & journals as well as visual materials on Population Education & Adult education was organized by the Adult Education Research Centre of the Gujarat Vidyapith and Indian Society for Population Education Over 100 delegates belonging to Medical, Social work & legal professions attended the conference The Vice-Chancellor Prof Ramlal Parikh stressed the need for a social movement to raise the marriage age to a minimum of 25 for boys & girls both to contain population growth

Calendar of Events

Title	Dates	Organising University Institute	Participants
Ayurvedic Seminar on Skin Diseases	February March, 1984	Gujarat Ayurved University, Jamnagar	About 300 Vaidyas, Professors & Experts
Impact of College Libraries on Higher Education in Assam	February 24, 1984	Department of Library Science, Gauhati University	———
UGC Seminar on Assessment of the students at the College level in the N E region	March 2-5, 1984	Department of Education, Pragjyotish College, Gauhati	———

Sports News

Encouraging performance of Varsities hockey team

Combined Universities Hockey Team once again has displayed creditable performance at the recently concluded All India Republic Day Hockey Tournament at Katni The team was in fact Runners-up in the Tournament after the declaration of BSF and EME, both teams from Jullundur as joint winners The performance of each match played by the combined Universities Team is as below

Beat DEG Kirki (Poona)	1-0
Beat ASC, Jullundhur	3-1
Beat Artilary Centre, Nasik	8-7
Lost to BSF	0-1

Combined Universities Team was declared winners in the hard lines for the 3rd place when HSEB Chandigarh expressed their inability to play

New cotton research laboratories inaugrated at PAU

Dr Sukhdev Singh, Vice-Chancellor of the Punjab Agricultural University said that Punjab produced 16 per cent of the total cotton produced in the country and that the per hectare yield of cotton in Punjab was the highest in the country The reason behind this was the development of high yielding and disease resistant varieties and superior technology evolved by the cotton scientists of the University, he added

Dr Sukhdev Singh was recently inaugurating the newly constructed cotton research laboratories on the Campus

Tracing the history of cotton research in India, the Vice-Chancellor said that the primary interest of the British Rulers was to produce more fibre to meet the requirements of the textile mills in Britain The research on cotton was initiated in the beginning of this century and the systematic research on cotton was srarted at Lyallpur where 4F and LSS varieties were evolved Till the partition, American cotton was grown on a small area of Abohar-Fazilka belt and the rest of Punjab was considered unsuitable for this crop But this notion proved wrong with the development of short duration and pest resistant varieties like 320F, H14 followed by many others The Vice-Chancellor showed concern over the damage to cotton crop during the past season and hoped that such situation would not be allowed to repeat in future by adopting adequate plant protection measures

Dr T H Singh, Senior Cotton Breeder and Head of the Department of Plant Breeding of the PAU in his welcome address highlighted the importance and need of research on cotton He said that these laboratories had been built at a cost of Rs 7 21 lakhs provided under the World Bank Financed Integrated Cotton Development Project He pointed out that the new complex included Agronomy, Breeding, Entomology and Pathology Laboratories besides a crop museum and offices

HAU workshop on Home Economics

' It is imperative to give new dimension to Home Science syllabus because the content of home science syllabus designed

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Correspondence Course in Evaluation Methodology & Examinations

(Basic, Intermediate and Advanced Level)

Applications are invited from College/University teachers for admission to Correspondence Course in Evaluation Methodology and Examinations conducted and co-ordinated by the Research Cell, Association of Indian Universities There are three separate courses one each at Basic Level, Intermediate Level and Advanced Level (Special Professional Course) The duration of each of the three courses is six months (April 1st, 1984 to September 30th, 1984) However, the Basic Level Course is offered from Regional Centres like Delhi Bombay, and Madras A personal 'Contact Programme for three days is planned for each of the three courses A set of prescribed books will be supplied to every candidate free of cost

Requests for prospectus and application forms accompanied by a crossed Indian Postal Order for Rs 5/- drawn in favour of the Secretary Association of Indian Universities and a self addressed stamped envelope (Re 1/-) should reach the undersigned The last date for the receipt of application in the prescribed form is **15th March 1984** for non-sponsored candidates and 30th March, 1984 for sponsored candidates For sponsored candidates University/Institution can pay the course fee and travel expenses for contact programmes out of unassigned grants provided by University Grants Commission

Project Director (Examinations)
Research Cell,
Association of Indian Universities,
6 DDA Building, Nehru Place,
New Delhi-110019.

and developed so far have largely remained unpopular in Indian setting" said Dr R P S Tyagi, Director of Research, Haryana Agricultural University (HAU) Hissar while recently inaugurating a three-day workshop on Home Economics for schools in the College of Home Science of the university

Stressing the need for developing Home Economics within the framework of National Council of Educational Research and Training (NCERT) syllabus Dr Tyagi said that for the new home science syllabus 'Home' should be our basic unit for national development For this purpose he urged the scientists and delegates to get in touch with the problems of rural, specially the uneducated, farming community

The three-day workshop was organised and sponsored by NCERT 20 delegates from various home science institutions of the country took part in the workshop In this workshop the scientists explored the possibility of bringing about a qualitative improvement and quantitative expansion of Home Science education

Farm business training for rural people

The Department of Business Management of the Punjab Agricultural University has started a new three-month training course in agricultural business management for the educated young men of the rural areas of Punjab

P U is the first educational institution to offer such a training programme

The subjects included in the curriculum are principles of management, agricultural business management, accounting and finance, marketing and salesmanship, farm management and human relations besides soil management, plant protection, horticulture and farm machinery There are 25 seats of which 5 seats are reserved for the pre-released defence personnel

After passing this course the trainees can take up jobs in the Agricultural inputs marketing companies and State Government departments and undertakings involved in rural development This training will also benefit those persons who intend starting their own business relating to the distribution and sale of agricultural inputs in the rural areas

ICAR sub-project sanctioned to JNKVV

The Indian Council of Agricultural Research has recently sanctiond to the Jawaharlal Nehru Krishi Vishwavidyalaya, Jabalpur, a new NARP sub-project for strengthening research on the Sehore and the Sagar campuses Under this, research on soybean gram lentil, arhar and rainfed farming would be strengthened

HAU symposium

Under the auspices of Indian Phytopathological Society, a symposium on Chemical Control of Plant Diseases will be held at Haryana Agricultural University from 16th to 18th February 1984 This was disclosed by Dr J N Chand, Chairman of the Organising Committee and Director of Publications, HAU The main theme of the symposium will be the Bordeaux Mixture—a fungicide which completes hundred years of its discovery and which still holds a promise for chemical control of plant diseases

Over 300 delegates from different parts of the country are expected to participate in the symposium Dr K D Paharia, Plant Protection Adviser, Govt of India will inaugurate the symposium

Soviet delegation at HAU

A Soviet delegation which was on a visit to India under Indo-Soviet protocol lauded agricultural research by the scientists of Haryana Agricultural University, Hissar The delegation, on a two-day visit to HAU, had discussions with Dr R P S Tyagi, Director of Research and other senior members of the faculty The Soviet scientists were particularly impressed by the work of the plant breeders who have evolved varieties that are suitable to the local conditions

The delegates visited amongst other places the museum of plant breeding, HAU research farm botanical gardens and some laboratories

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We Congratulate

1 Dr V K R V Rao, an internationally renowned Indian economist, former Union Minister and Ex-Vice-Chancellor of Delhi University who has been made a national professor which is the highest academic honour awarded to those who reach the pinnacle in their chosen fields

2 Shri L D Kataria who has taken over as Vice-Chancellor of the Haryana Agricultural University, Hissar Shri Kataria was formerly Commissioner and Secretary of Agriculture in the Haryana Government

3 Dr Haribhai G Desai who has been appointed to carry on the current duties of the office of the Vice-Chancellor of Saurashtra University Dr Desai is Professor and Head of the Department of Education in the University and also the Dean of the Faculty of Education

4 Dr R D Misra who took over as Vice-Chancellor of Allahabad University on January 18, 1984

5 Dr J S Grewal, Vice-Chancellor, Guru Nanak Dev University, Amritsar who has been elected as the General President of the Indian History Congress

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AIU Library

Established in 1965, the AIU Library has acquired over the years a valuable collection of books and documents on Higher Education Among the topics prominently represented are Educational Sociology, Educational Planning, Educational Administration, Teaching & Teachers' Training, Examinations, Economics of Education and Country Studies Developing fields of Adult Education, Continuing Education and Distance Education, and Educational Technology are also well stocked The Library is particularly strong in its collection of reports whether they are on the setting up of different universities or on the state of Higher Education Files of Annual Reports of different universities are also maintained Readers are kept informed of the latest acquisitions through our column 'Additions to AIU Library'

The Library also receives about a 100 periodical titles on Higher Education All these are indexed regularly and a select list appears every month as 'Current Documentation in Education'

Doctoral Degrees awarded during the preceding month are reported as 'Theses of the Month' while registrations made for such degrees are flashed as 'Research in Progress' Bibliographies are also compiled and supplied on demand

Research scholars and students of education are welcome to use these resources The Library is situated at 17-B, Indraprastha Marg, New Delhi-110 002 It is open from 10 a m to 5 p m Monday through Saturday except Second Saturday Access can also be had through inter library loan for which requisition must be made through your Librarian

A list of Research Scholars Registered for Doctoral Degrees of Indian Universities

PHYSICAL SCIENCES

Mathematics

1 Dinge Snehal Madhukar *A study of some properties of generalized Stieltjes transform* Shivaji U Kolhapur Dr R K Saxena

2 Katre Shashikant Anant *Complete solution of the cyclotomic problem for a prime modulus and related topics* Pb U, Chandigarh Prof A R Rajwade

Statistics

1 Agnihotri Yogendra *Simulation of [illegible] hydrograph through stochastic models and black box technique* Pb U, Chandigarh Prof O P Bagai and Dr [illegible] V [illegible]

Physics

1 Aggarwal Navin *Hyperfine interactions through perturbed angular correlation techniques* Pb U, Chandigarh Prof H S Hans

2 Bhosale, Popatrao Nivrutti *Studies on growth of solution-gas interface films and their use in PEC cells* Shivaji U, Kolhapur Dr S H Pawar

3 Kulkarni, Vasant Ramchandra *Structural electrical and magnetic study of some mixed ferrites* Shivaji U, Kolhapur Dr A S Vaingankar

4 Parkaray, Rita *Hydrodynamics of laser driven fusion plasma and non-linear interaction* U Delhi Dr M P Srivastava

5 Sudhir Kumar *Energetics of interstitial and substitutional impurities in metal* Pb U Chandigarh Dr S Prakash

6 Tamhankar Shobha Pandurang *Studies on spray pyrolytic deposited chalcogenide films and their use in ECPV cells* Shivaji U, Kolhapur Dr S H Pawar

7 Vyankatesh Naidu, T Ramesh *Crystallographic, magnetic and electrical studies of copper containing mixed ferrites* Shivaji U Kolhapur Dr S A Patil

Chemistry

1 Asari N Murukan *Studies in the complexes of some oxocations* U Ker, Trivandrum Dr C P Prabhakaran

2 Gupta Hari Om *Chronopotentiometric studies at the [illegible] graphite electrode* Pb U Chandigarh Dr J D Sharma and Dr Ram Prakash

3 Hukeri Shashikant Vishnu *Studies on [illegible]* Shivaji U Kolhapur Dr N G Zunjarwad

4 Natekar Saroj *Chemical studies on some [illegible] medicinal plants* Devi Ahilya Indore Dr P T Mishra

5 Oommen Susan K *Inorganic chemistry [illegible] coordination complexes* U Ker, Trivandrum Dr C P Prabhakaran

6 Parse Milind Mahadeo *The solution [illegible] and properties of some surface coating polymers* Devi Ahilya Indore Dr K C Kudva

7 Patil Bhaskar Ganpatrao *Metabolism and [illegible] enzymes of cellulolytic fungi* Shivaji U Kolhapur Dr P K Renickar

Engineering & Technology

1 Chogle Jayant Mahadeo *An investigation into the air pollution problem due to lagoons* Shivaji U Kolhapur Dr B Subba Rao

2 Mhaskar Ashok Keshav *Development of mathematical model to evaluate pollution load in a stretch of Krishna River Basin* Shivaji U Kolhapur Dr B Subba Rao

3 Goel, Rakesh Kumar *Investigation of lower atmosphere by using LF and VLF propagation* Kanpur U Dr V K Jain

4 Mishra Krishna Autar *Some aspects of optimizations of thyristor controlled D C drives* Kanpur U Dr V K Jain

5 Naik K P *Thyristor control of D C motors* Kanpur U Dr V K Jain

6 Tripathi, Kamala Kant *Model and sub-optimal control of a class of distributed parameter systems using method of weighted residuals* Kanpur U Dr V K Jain

BIOLOGICAL SCIENCES

Anthropology

1 Chopra, P K *Physical anthropology* U Delhi Dr P K Seth and Dr S Seth

2. Dey, Swarupa *Physical anthropology* U Delhi Dr S Seth and Dr P K Seth

3 Gaharbar, Nitiraj Singh *The study of crosses of normal/abnormal factors and their parental chromosomes* HS Gour, Sagar Dr R S Bali

4 Gottimukkala Hema Latha *Dermatoglyphic study of mentally retarded children* U Delhi Dr S C Tiwari

5 Kapoor Vicky *Human cytogenetics* U Delhi Prof J P Singh and Dr P K Ghosh

6 Panwar Chandra Lekha *Cytogenetic profiles in aberrant human reproductive performance* HS Gour, Sagar Dr R S Bali

7 Rasik Bihari *Lectins as a tool to detect interspecific differences in mammalian blood and their relevance in highlighting immunogenetic relationship between man and other animals* Pb U, Chandigarh Dr V Bhalla

8 Verma Rajeshwari *Growth and physiology* U Delhi Dr M K Bhasin

9 Verma Sunil Kumar *Anthropogenetic study of the Gonds of Bastar District M P* HS Gour Sagar Dr R S Bali

Botany

1 Singh, Akhilesh Kumar *Vatavaran pradushan aur padap rogat* BHU Varanasi Prof D N Rao

2 Vaidya, Muralidhar Bhimrao *Study of mycoparasitic and entomogenous fungi of Maharashtra* Shivaji U Kolhapur Dr M S Patil

Zoology

1 Mann Birendra *Irradiation induced sterility in* **Callosobruchus analis** *Fab and the use of sterile individuals for the suppression of pest population* Pb U, Chandigarh Dr H R Pajni

2 Patil, Rajaram Nivrutti *Studies on mucosubstances in the gall bladder of some vertebrates* Shivaji U, Kolhapur Dr M N Nalawade

3 Pushpa Devi *On the karyotypic variability of some Indian Curculionidae (Coleoptera)* Pb U Chandigarh Prof. G P Sharma

Medical Sciences

1 Belbaj Mohammad S *Indo-Libyan studies on epidemiology of leprosy* BHU Varanasi Dr Paramjit Kaur

Agriculture

1 Farindra Singh *Identification of dwarfism genes and evaluation of their effects on yield and yield traits in spring wheat* BHU Varanasi Dr G S Sharma and Dr B D Singh

2 Reddy, L Ranjit Kumar *Genetic analysis of yield and yield traits in certain lines extracted from the cross,* **Cicer arietinum X C reticulatum** BHU Varanasi Dr B D Singh

3 Singh, Rana Devendra Pratap *Mutagenesis in chick pea,* **Cicer arietinum** L BHU Varanasi Prof Singh M R

A list of Doctoral Theses Accepted by Indian Universities

PHYSICAL SCIENCES

Mathematics

1 Atal Satya Narayan *Investigations in generalised hypergeometric functions and Laplace transforms* U Raj Jaipur

2 Bohra R C *Some generalised special functions and their applications to boundary value problems* MSV Udaipur

3 Chennadevi Prabhulingappa Halakatti Sudhani *Topics in cosmology and relativity: A contribution to pre-big-bang theory and arrow of time* Kar U Dharwad

4 Iqbal Husain *Optimality criteria and duality in non-differentiable continuous programming and control* IIT Delhi

5 Jacob Mercy K *Analysis of discrete function theory* U Cochin

6 Mehta P K *Some problems of boundary layer control and laminar boundary layer* MSV, Udaipur

7 Nayak Sudarsan Kumar *A study of oscillation and non-oscillation behaviour of solutions of a class of second order ordinary differential equations* Berhampur U

8 Parameshwara Bhatta S *Generalizations of distributive standard and neutral elements and ideals in lattices* Mangalore U

9 Pramod Kumar *Boundary layer flows and heat transfer via quasi-linearization* IIT, Delhi

10 Prasad, Ganga Sharan *Investigation into some current problems in geodetic dynamics* Bihar U Muzaffarpur

11 Raman Vinjamuri *On congruences, filters and ideals in semilattices* Andhra U Waltair

12 Sharma, R D *Application of probability to theory of queueing systems and allied fields* Agra U

13 Singh, Kameshwar Prasad *Some contributions to the fixed point theory in various spaces* Mag U, Bodh Gaya

14 Singh V B *Certain integral equations of mixed boundary value problems arising in mathematical physics* Kanpur U

15 Sushil Kumar *Theories of gravitation in relativity* Bihar U, Muzaffarpur

16 Tiwari, Mahesh Chandra *Some boundary value problems associated with dispersion in laminar slip flows* IIT, Delhi

Statistics

1 Agarwal, Ranjana *Contribution to the theory of sampling with varying probability* U Delhi

2 Aylawadi Des Raj *Studies on some optimization problems* U, Delhi

3 Mehrotra, Prem Chand *Contributions to sampling techniques* U Delhi

Physics

1 Apparao Grandhi *Studies on summer monsoon over India during two consecutive years of drought and good monsoon* U Poona

2 Biswas, Bhaswati *Frequency and wave-vector dependent dielectric function and related physical properties of one-component classical rare and metallic degenerate plasma* U Delhi

3 Chougule, Vijaykumar Bhau *Studies on photoelectrochemical cells formed with tin oxide electrodes* Shivaji U, Kolhapur

4 Dixit A N *Classical scattering of light and intermediate mass nuclei* Kanpur U

5 Girdhar Sunetra *Study in stellar spectroscopy* RSU, Raipur

6 Gupta Neela Das *Study of charge storage and transport mechanism in polar polymers with special reference to electret effect in polyethylene terephthalate (P E T)* RDV Jabalpur

7 Kaura Tara *Studies on the electronic and pyroelectric properties in polymers with special reference to poly vinylidene fluoride* IIT, Delhi

8 Khanna, Kailash Nath *A study of some properties of simple metals using the model potential method* Kanpur U

9 Krishna Raju, Dantuluri Rama *Studies on the total attenuation coefficients in certain compounds employing a Mossbauer spectrometer* Andhra U, Waltair

10 Lakshmi Narayana, Kalleypally *Ultrasonic studies in liquid state* Utkal U, Bhubaneswar

11 Mishr **Kailash Nath** *Recurrent modulation of galactic cosmic rays in relation to solar and interplanetary disturbances* APSU Rewa

12 Ramakrishna, V *Nuclear quadruple investigations on chlorine and bromine nuclei* Nagarjuna U

13 Sahasrabudhe Vikas Shriram *X-ray spectroscopic study of some transition metal alloys and ferrites* Shivaji U Kolhapur

14 Salgia C P *Study of some aspects of electrohydrodynamic heat transfer from compact devices* Vikram U, Ujjain

15 Sengupta, Malobika *Molecular vibrations and molecular dimensions in some large molecular systems* Kanpur U

16 Sharma Banwari Lal *Optoelectronic and dielectric processes in kapton polypyromellitimide film* IIT, Delhi

17 Shiv Singh *Study of passive concepts for solar heating and cooling of buildings* IIT Delhi

18 Singh, Jaipal *A theoretical investigation into the second third and fourth elastic constants of ionic crystals* Agra U

19 Singh Kamendra *Studies on the thermoelastic behaviour of ionic crystals* Agra U

20 Sisaudia Madhav Singh *Luminescence studies of zinc oxide phosphors* Vikram U, Ujjain

21 Tambay R G *Phenomenological approach towards the lattice dynamics of cubic metals* Kanpur U

22 Vasanta Bharatula *Investigations of the optoelectronic properties of some organic and inorganic photoreceptors with special reference to PVP-I2 charge transfer complex and CdSSe (Cu)* IIT, Delhi

23 Yagnik H K *Studies on ionospheric absorption of short radition waves at vertical and oblique path* MSV Udaipur

Chemistry

1 Agarwal Anil Kumar *Studies on receptor interaction of non-steroidal estrogens Relationship to their post-coital contraceptive activity* Kanpur U

2 Agarwal, Arun Kumar *Analytical physico-chemical and complexometric studies of sulphanaphthalein indicators* U Delhi

3 Agarwal Sushil *Chelation of some pesticides with metal ions of biological interest* Kanpur U

4 Ajai Kumar *Studies on lipid-lipid and lipid-protein interactions in model membrane systems* Kanpur U

5 Balapure A K *Studies on chemical basis of insulin formation in pancreas* Kanpur U

6 Bali, Pawan Kumar *Chemistry of some hydrogen and halogen containing phosphorylesters* Pb U, Chandigarh

7 Batra Kiran *Synthesis and evaluation of polyesters and copolyesters based on bisphenols* Kanpur U

8 Baveja Anil Kumar *Analytical studies on the chemical pollutants of steel industry* RSU Raipur

9 Bhandari Rani Bala *Studies in flavonoids* MSV Udaipur

10 Bhatia, Mamta *Studies on immobilized enzymes* Kanpur U

11 Bhatnagar, Mani *Modification of spontaneous and evoked release of catecholamines from the myocardium by some anti-hypertensive agents* Kanpur U

12 Bhattacharyya Monimohan *Investigations on the nature of ion-solvent interaction on the basis of viscosity measurements* U Calcutta

13 Chakraborti Nirmalkumar *Studies on vinyl polymerization Polymerization initiated by metal redox systems* U Calcutta

14 Chaudhary, Anil Kumar *Studies on chelation of chlorophenoxy acetic acid herbicides with some plant metal ions and their mode of action* Kanpur U

15 Choudhury Nalinikanta Saran *Studies on kinetics and mechanism of reactions* Utkal U, Bhubaneswar

16 Chouhan, R S *Identification and selective determination of some rare earths with hydroxytriazenes* MSV Udaipur

17. Datta, Arunkumar *Studies on oscillatory reactions* U, Calcutta

18 Desai, Dhanaji Gundu *Application of Meldrum's acid in organic synthesis and synthetic studies in natural products* Shivaji U Kolhapur

19 Dubey Prakash *Studies on interaction of anaesthetic molecules with biological membrane* Kanpur U

20 Gopinathan Nair K *Studies in the chemistry of titanium and related elements* U Ker Trivandrum

21 Gujral Harjinder Kaur *Metal complexes of pyridinecarboxaldehyde thiosemicarbazones* Pb U Chandigarh

22 Gupta Samarendra Das *Studies on the complexometric determination of certain constituents present in ceramic systems* ISM, Dhanbad

23 Harish Chandra *Studies on toxic effect of cyanide on industrial workers* Kanpur U

24 Harish Ranjan *Synthetic studies in terpenoids* IIT, Delhi

25 Jain Girish Kumar *Systematic chemical and biological investigations of indigenous medicinal plants and synthesis of newer biodynamic agents related to drugs from plant sources* Kanpur U

26 Jain Nisha *Polarographic behaviour of sulfonaphthalein dyes under various experimental conditions* Agra U

27 Jain Sunil Kumar *Intramolecular ortho group participation* IIT Delhi

28 Kaul Shanti Mohan *Chemical studies on bio-transformation of pyridine derivatives* Kanpur U

29 Keswani Pushpa *Kinetics and mechanism of oxidation with peroxomonophosphoric acid* U Raj Jaipur

30 Khandelwal R C *Studies on adsorbate ion metal surface interactions employing tracer technique* MSV Udaipur

31 Kothari, D L *Kinetics and mechanism of acid permanganate oxidation of malonic acid substituted malonic acids and their esters and the role of Mn(III) in these oxidations* MSV Udaipur

32 Krishnan R *Metal complexes of some amidoxime derivatives* U Ker, Trivandrum

33 Kushwaha S S S *Studies on structure-activity correlation of phenoxyacetic acid herbicides and their complexation with some metal ions of biological interest* Kanpur U

34 Laha Swapna *Studies on the chemistry of some secondary plant metabolites* U Calcutta

35 Langade Appasaheb Dada *Mesityl oxide as an extractant for metal chelates* Shivaji U Kolhapur

36 Lilani M D *Kinetics and mechanism of electron transfer reaction between thiourea some thioureas and related compounds and ferricyanide ion* MSV Udaipur

37 Mandloi Dilip S *Chemical investigation of some indigenous plants* Vikram U, Ujjain

38 Misra Sandhya Arati *Kinetics and mechanism of some oxidation reactions* Berhampur U.

39 Modak, Sadhan Kumar *Studies on photopolymerization of methylmethacrylate using ketone-amine systems as initiator* U Calcutta

40 Mohanty Sudhansubala *Ion-solvent interactions* Utkal U Bhubaneswar

41 Mohapatra Prashant Kumar *Synthesis of pharmacologically active heterocycles* Utkal U Bhubaneswar

42 Mukherjee Bani *Synthetic studies in 4-hydroxycoumarins* U Delhi

43 Myrboh Bekington *(1) Synthetic studies on polarized ketoketen-S S-Acetals and (2) Synthetic studies on lead (IV) acetate oxidation* NEHU

44 Padma Nabha, J *Kinetics and mechanism of some organic reactions* Berhampur U

45 Panda Antarjyami *Reactions of octahedral haloamine cobalt (III) complexes in solution* Sambalpur U

46 Pandey, Gopal Krishna, *Monitoring and abatement of organic chemicals in the industrial working environment* Kanpur U

47 Pandey, Madhu *Some biochemical changes in experimental cardiac arrhythmias and their modification by antiarrhythmic agents* Kanpur U

48 Parekh, B R *Potential antimicrobials* Bhavnagar U

49 Pathak, Priti *Studies on mechanism of action of some organic and volatile fungicides* Kanpur U

50 Rami Reddy A Venkata *Vinyl polymerization in solution Vinyl polymerization initiated by manganese (III) acetate—a kinetic study* SKU Anantapur

51 Rashida Banu *Kinetics and mechanism of the oxidation of some organic compounds by transition metal ions* MSU Udaipur

52 Rekhi, Jasbir Singh *A study on the complexing properties of allyl isothiocyanate with common and less common ions* Kanpur U

53 Renu Bala *Studies on synthesis of some heterosteroids and related compounds* Pb U Chandigarh

54 Sahgal, R K *Study of chemical quality and industrial pollution on surface and ground water in Ganga Basin Kanpur Metropolis* Kanpur U

55 Satyanarayana Murty Konda Veera Surya *Some new analytical applications of hydrogen peroxide* Andhra U, Waltair

56 Saxena Alok *Chemical studies on membrane changes in hepatic disorders* Kanpur U

57 Saxena P C *Studies in synthetic drugs Part I Psychotropic agents Part II Anti-cancer agents* Kanpur U

58 Saxena P K *Synthesis and characterization of elastomeric polyurethanes* Kanpur U

59 Saxena Rashmi *Molecular mechanism of anti-fertility action of some non-steroidal compounds* Kanpur U

60 Sen Gaur *Solvent inter-esterification reaction of fats* U Calcutta

61 Sethi Chaman Lal [illegible] *tions of mo-* [illegible] IIT Delhi

62 Setty R Venugopal *Studies in organic polarography Electro-reduction and kinetics of acid hydrolysis and formation of some azomethines of furfural* SKU Anantapur

63 Shripuri Sushma *Studies on chelating agents* MSU Udaipur

64 Sindhi P C *Ion exchange studies on nicotine and related compounds* MSU Udaipur

65 Sonakia A K *Chromatographic studies on separation of compounds* [illegible] *of zeolite and other adsorbents* Vikram U Ujjain

66 Srivastava, Madhulika *Chemical studies on regulation of catecholamine biosynthesis in cardiovascular diseases and ageing* Kanpur U

67 Subramanian Lakshmi M *Studies on cyclodehydration* U Jammu

68 Sukla Sharda Prasad *The study of complexometric formation of some Schiff's bases with d block elements* Kanpur U

69 Tandon Anuradha *Studies on the chemistry of steroid metabolism by pre-implantation embryo and genital tract of rabbits in vitro* Kanpur U

70 Tandon Renu *Chemical investigation of Indian medicinal plants having anti-fertility anti-cancer and anti-inflammation activity* Kanpur U

71 Verma, Rajiv Mohan *Studies in some potential analytical reagents* RSU Raipur

72 Wasey Abdul *Trace analysis of metals after extraction and coprecipitation of their metal chelates with naphthalene* IIT Delhi

Earth Sciences

1 Bhat, Mohmad Shafi *Study of granites between Saspola and Sngemo, Ladakh District, J & K State* U Jammu

2 Jayasheela H M *Genesis and beneficiation studies of iron ores of Hospet-Bellary sector, Karnataka State India* Gulbarga U

3 Mukherjee Manoj Kumar *Neotectonism of the South Cambay Basin, Gujarat* Utkal U, Bhubaneswar

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Editor SHIV LAL

Research by Institute For Electoral Studies, New Delhi
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INDIAN STATISTICAL INSTITUTE

Admission Notice 1

Session 1984-85

Applications are invited for the following courses for which duration, values of monthly stipend and eligibility conditions are briefly described below Further details and other conditions are available in the prospectus Admission to all courses is based on academic record, written tests and interview.

1.1 BACHELOR OF STATISTICS (HONS)

Duration 3 years, *Stipend* Rs 100, *Eligibility* Successful completion of 10+2 years of secondary education (or equivalent thereof) with Mathematics and English

1.2 MASTER OF STATISTICS

Duration 2 years, *Stipend* Rs 125, *Eligibility* 3 years Bachelor's degree with Statistics and Mathematics as full subjects or equivalent qualification, obtained after twelve years of secondary education Those without Statistics, but having outstanding mathematical ability, may also be considered Holders of Statistician's Diploma/Senior Diploma of ISI are eligible for admission to the second year of the course

1.3 MASTER OF TECHNOLOGY IN COMPUTER SCIENCE

Duration 2 years *Stipend* Rs 600 *Eligibility* Master's degree in a relevant subject or Bachelor's degree in Engineering/Technology or equivalent qualification and knowledge of relevant topics of Physics and Mathematics

1.4 RESEARCH COURSES LEADING TO REGISTRATION FOR THE PH D DEGREE

Stipend Rs 600, *Eligibility* a good Master's degree in Mathematics, Statistics, or Mathematical Economics, or exceptionally outstanding mathematical maturity with B A /B Sc degree with Mathematics, Statistics, or Economics as a main subject

2 POST-GRADUATE DIPLOMA COURSE IN STATISTICAL QUALITY CONTROL AND OPERATIONS RESEARCH

Duration 15 months, *Stipend* Rs 600, *Eligibility* Bachelor's degree in Engineering/Technology or Master's degree with Statistics/Mathematics up to graduate level or recognised research/other work in Statistics

All courses are offered in Calcutta In addition, courses 1 2 and 1 3 are offered in Delhi and course 1 4 in Bangalore

Besides stipend there is also a suitable annual book allowance Hostel facilities are available *Candidates who have appeared or are due to appear for the qualifying examinations before 1 July 1984 can also apply* Selection tests for the courses will be conducted at a number of centres Candidates should satisfy themselves that they are eligible for admission to the course for which they apply If at any stage it is found that a candidate does not satisfy the eligibility conditions or the information furnished by him in the application is incorrect, his application will be cancelled Prospectus and application form can be obtained from the **Dean of Studies, Indian Statistical Institute, 203 Barrackpore Trunk Road, Calcutta 700 035** For this an amount of Rs 8/- is to be paid by cash (between 10 30 a m and 2 00 p.m) or by crossed postal order or by bank draft payable at Calcutta in favour of 'Indian Statistical Institute ' Postal orders must contain the name and address (in block letters) of the sender Money orders and cheques will not be accepted

Last date for receiving requests for application form	**16 March 1984**
Last date for receiving applications	**31 March 1984**
Date of selection tests	**20 May 1984**

Indian Council of Agricultural Research

Krishi Bhawan, New Delhi-110001

ICAR AWARDS FOR TEAM RESEARCH FOR THE BIENNIUM 1983-84

Nominations are invited for ICAR Award for Team Research for the biennium 1983-84 The award is given once in two years to interdisciplinary teams of research workers for outstanding research work in the field of agriculture including agricultural economies and statistics, animal husbandry and fisheries in the form of a scroll of honour and a medal to each member of the award winning team

All scientists engaged in research in the field of agriculture, animal husbandry and fisheries sciences in India shall be eligible for the award The award of each prize shall be made for notable and original interdisciplinary research both fundamental and applied as reflected in books, monographs, papers or other forms of published account of outstanding research work, inventions or discoveries In the case of contributions like new crop varieties or new breeds of animals at least 3 years' data on the performance of the strains will have to be provided The results of research achieved/contributions made by the teams should be during the five years preceding the year of award

Nominations can be made amongst others by Vice Chancellors of agricultural universities or other universities having faculty of agricultural or biological sciences, Directors of research institutes including Principals of agricultural and veterinary colleges, Presidents of scientific establishments in the country such as CSIR, BARC etc

Nominations for the award should be supported by a statement of the inter-disciplinary team work, achieved, accomplished or performed by the team which is being nominated and a reasoned justification for the nomination together with the reprints of publications or other supporting data In all matters relating to the award the decision of the Council shall be final and no correspondence on this account will be entertained

The last date for receiving nominations for the award is **30th April, 1984** The last date for candidates in the Andaman and Nicobar Islands Lakshadweep States/Union Territory in the North Eastern Region, Ladakh Division of J&K State & Sikkim is **16th May, 1984.** Six copies of the proposals on the prescribed proforma for the award should be sent in a sealed cover marked 'Confidential' to Shri K S Krishnaswami, Additional Secretary (A), Indian Council of Agricultural Research, Krishi Bhawan, New Delhi-110001 The copy of the proforma can be obtained from him by sending a self addressed envelope in the size of 27 cm x 12 cm Applications/nominations received without six sets of reprints of publications are liable to be rejected at the scrutiny stage

RAFI AHMED KIDWAI MEMORIAL PRIZES FOR AGRICULTURAL RESEARCH FOR THE BIENNIUM 1982-83

Nominations are invited for the Rafi Ahmed Kidwai Memorial Prizes for Agricultural Research for the biennium 1982-83 carrying an amount of Rs 10,000 (Rupees ten thousand only) in cash or kind or both, a citation and a certificate

The award is given once in two years to Indian scientists for outstanding research, fundamental or applied, including inventions, discoveries, etc leading to results of practical value in any field or subject within the purview of research in agricultural, animal husbandry and fisheries, including agricultural economics, agricultural statistics and nutrition Only results of researches/contributions made during the five years preceding the year of award shall be considered for the award In the case of claims based on evolution of new varieties/strains, the final trials should have been completed within five years preceding the year of award

Nominations can be made amongst others by Vice-Chancellors of agricultural universities/general universities with faculties of agricultural or biological sciences, Directors of research institutes, including Principals of agricultural and veterinary colleges, Presidents of scientific societies and academies and heads of the principal scientific establishments in the country such as CSIR, BARC etc

Nominations for the award should be supported by a statement of work, achievement, accomplished or performed by the candidate who is being nominated and a reasoned justification for the nomination together with reprints of publications or other supporting data In all matters, decision of the Council shall be final and no correspondence on this account will be entertained.

The last date for receiving the nominations for the award is 30th April, 1984. The last date for candidates in the Andaman and Nicobar Islands, Lakshadweep States/Union Territory in the North Eastern Region, Ladakh Division of J&K State & Sikkim is **16th May, 1984.** Proposals (in quadruplicate) on the prescribed proforma for the award should be sent in a sealed cover marked 'Confidential' to Shri K S Krishnaswami, Additional Secretary(A), Indian Council of Agricultural Research, Krishi Bhawan, New Delhi-110001 The copy of the proforma can be obtained from him by sending a self addressed envelope in the size of 27 cm x 12 cm Applications/nominations received without four sets of reprints of publications are liable to be rejected at the scrutiny stage

HARI OM ASHRAM TRUST AWARDS FOR THE YEAR 1984.

Nominations are invited for the Hari Om Ashram Trust Awards for the year 1984 Three awards of the value of Rs 10,000 each in cash or kind or both are given every year for outstanding original research, fundamental or applied, including inventions, discoveries etc leading to results of practical value in any field or subject within the purview of research in agricultural sciences, forest farming and social forestry and animal sciences (including fisheries)

All scientists engaged in research in the fields of agriculture, forest farming and social forestry, animal husbandry and allied sciences in India shall be eligible for the awards The results of research achieved/contributions made during the five years preceding the year of the award shall only be considered for the awards In the case of claims based on evolution of new varieties/strains, the final trials should have been completed within five years preceding the year of award

Nominations can be made amongst others by Vice-Chancellors of agricultural universities or other universities having faculty of agricultural or biological sciences, Directors of Research institutes including Principals of agricultural and veterinary colleges, Presidents of scientific societies, academies and heads of the principal scientific establishments in the country

Nominations for the awards should be supported by a statement of work, achievement accomplished or performed by the candidate who is being nominated and a reasoned justification for the nomination together with reprints of publications or other supporting data

The last date for receiving nominations for the awards is **30th April, 1984** The last date for candidates in the Andaman and Nicobar Islands, Lakshadweep States/Union Territory in the North Eastern Region, Ladakh Division of J&K State & Sikkim is **16th May, 1984** Five copies of the nominations on the prescribed proforma for the award should be sent in a sealed cover marked 'Confidential' to Shri K S Krishnaswami, Additional Secretary (A), Indian Council of Agricultural Research, Krishi Bhawan, New Delhi-110001 The copy of the proforma can be obtained from him by sending a self addressed envelope in the size of 27 cm x 12 cm Applications/nominations received without five sets of reprints of publications are liable to be rejected at the scrutiny stage

DR. RAJENDRA PRASAD AWARD FOR THE BEST ORIGINAL STANDARD WORKS IN HINDI ON AGRICULTURE INCLUDING ANIMAL SCIENCES AND FISHERIES—1984

Applications are invited for Dr Rajendra Prasad award for the year 1984 for standard original books/manuscripts in Hindi on agriculture, including animal sciences and fisheries published/written between April, 1983 to March, 1984 Books written by more than one author can also be considered Five copies of the books/manuscripts for the award may be sent in a sealed cover marked 'Confidential' to Shri K S Krishnaswami, Additional Secretary (A), Indian Council of Agricultural Research, Krishi Bhawan, New Delhi-110001, latest by **30th April, 1984** in a prescribed form obtainable from him The last date for candidates in the Andaman and Nicobar Islands, Lakshadweep States/Union Territory in the North Eastern Region, Ladakh Division of J&K State & Sikkim is **16th May, 1984**

In all matters relating to the award the decision of the Council shall be final and no correspondence on this account will be entertained

FAKHRUDDIN ALI AHMED AWARD FOR AGRICULTURAL RESEARCH IN TRIBAL AREAS FOR THE BIENNIUM 1982-83

Nominations are invited for the Fakhruddin Ali Ahmed Award for agricultural research in tribal areas for the biennium 1982-83 Two prizes of the value of Rs 10,000 (Rupees ten thousand only) each in cash or kind or both will be awarded for outstanding original research carried out in the tribal areas in the field of agricultural sciences and animal sciences including fisheries

All research workers engaged in research in agriculture, animal husbandry, fisheries and allied sciences in tribal areas (tribal areas for this purpose are those notified by the Ministry of Home Affairs, Govt of India) shall be eligible for the award The results of research achieved/contributions made during the five years preceding the year of the award shall only be considered for the award In the case of claim based on evolution of new varieties/strains the final trials should have been completed within five years preceding the year of the award

Nominations can be made, amongst others, by the Vice-Chancellors of the agricultural universities or other universities which have a faculty of agricultural or biological sciences, Directors of research institutes including Principals of agriculturals and veterinary colleges, Presidents of scientific societies, academies and heads of principals scientific establishments in the country such as Council of Scientific and Industrial Research, Bhaba Atomic Research Centre etc Each nomination for this award should be accompanied by a detailed statement of work and attainments of the nominee and a reasoned justification for the nominations together with the reprints of publications or other supporting data Also, a certificate of residence in the tribal area where the work was done obtainable from Head of the Institutes, should be appended It is emphasised that the award is intended for recognising outstanding research carried out in **tribal areas** and hence the scientist(s) concerned should have lived and carried out the research in any of the tribal areas notified by the Ministry of Home Affairs

The last date for receiving nominations/applications is **30th April, 1984.** The last date for candidates in the Andaman and Nicobar Islands, Lakshadweep States/Union Territory in the North Eastern Region, Ladakh Division of J&K State & Sikkim is **16th May, 1984** Four copies of the nominations on the prescribed proforma for the award should be sent in a sealed cover marked 'Confidential' to Shri K S Krishnaswami, Additional Secretary(A), Indian Council of Agricultural Researth, Krishi Bhawan, New Delhi-110001 The copy of the proforma can be obtained from him by sending a self addressed envelope in the size of 27 cm x 12 cm Nominations received without four sets of reprints of publications are liable to be rejected at the scrutiny stage

JAWAHARLAL NEHRU AWARDS FOR OUTSTANDING POST-GRADUATE RESEARCH IN AGRICULTURE—1984

The Indian Council of Agricultural Research invites applications from post-graduate students who have obtained their Ph D degree during the year 1983 in the fields of agriculture animal sciences (including fisheries) and home science for "Jawaharlal Nehru Award for Outstanding Post-graduate Research in Agriculture—1984 There will be ten prizes of Rs 5 C0/- each for outstanding research work of the following nature —

"Which may have bearing on finding a solution to any important national problem in the field of Agriculture, which is likely to have an impact on increasing the production or improving the quality of any important crop for human nutrition or animal productivity or increasing the technological efficiency of any process of economic importance connected with agriculture '

Candidates shall be required to submit the following documents through the Head of the Institute from where the thesis has been obtained —

(1) A copy of the thesis submitted by them for the award of the doctoral degree

(2) A certificate from the guide of the candidate for Ph D degree stating the extent to which the work is the candidate's own contribution

(3) 6 Copies of the synopsis indicating precisely and in concise terms the work done by the candidate

(4) 6 Copies of the bio-data with complete address for correspondence with telegraphic address if possible

The certificate awarded to the candidate for Ph D degree may also be sent There is no prescribed proforma for applying for this award Each candidate will be judged on the basis of the originality and the applied value of the investigations as revealed in the thesis submitted by him In all matters relating to the award the decision of the Council shall be final and no correspondence on this account will be entertained

Application with complete documents as mentioned above addressed to Shri K S Krishnaswami, Additional Secretary(A), Indian Council of Agricultural Research, Krishi Bhawan, New Delhi-110001 should be sent so as to reach on or before **30th April, 1984.** The last date for candidates in the Andaman and Nicobar Islands Lakshadweep States/Union Territory in The North Eastern Region, Ladakh Division of J&K State & Sikkim is **16th May, 1984** The award winning thesis will be retained by the Council for record In case the application is not accompanied by a copy of thesis and the required number of synopsis and bio-data, the application is liable to be rejected at the screening stage

UNIVERSITY OF DELHI

DELHI-110007

Advt No Estab IV 84/84 **Dated the 24th January 1984**

Applications on prescribed form are invited for the following posts —

Department		Designation
1 Department of English	i	One Professor (For South Campus)
	ii	One Reader (For post M A Course in the teaching of English as a second language)
	iii	Two Readers (One for South Campus)
2 Department of Urdu		One Research Associate
3 Computer Centre		One Senior Programmer
4 Modern European Languages (for South Campus)		Two Junior Assistant-cum-Typists (One each in French & German)
5 University Library System		Two Machine Operators (Maiox)
6 Central Office	i	Statistician—One
	ii	Statistical Assistant—One

Scale of Pay of the Posts Are

Professor Rs 1500-60-1800-100-2000-125 2-2500

Reader Rs 1200-50-1300-60-1900

Research Associate Consolidated monthly emoluments as Under -

Rs 1100 p m (fixed)
Rs 1300 - p m (fixed)
Rs 1500 - p m (fixed)
(On the recommendation of the Selection Committee)

Senior Programmer Rs 1100-50-1600

Junior Assistant-Cum-Typist Machine Operator Rs 260-6 290-EB 6-326-8-366-EB 8-390-10-400

Statistician Rs 700-40-900-EB-40-1100-50-1300

Statistical Assistant Rs 425 15-500-EB-15-560-20-700-25-800

All posts, except that of Research Associate carry D A C C A and H R A as admissible under the rules in force in the University from time to time

Essential Qualifications

Professorship

An eminent scholar with published work of high quality actively engaged in Research Ten years experience of teaching and or research Experience of guiding research at doctoral level

OR

An outstanding scholar with established reputation who has made significant contribution to knowledge

Readerships

Good academic record with at least second class Master s degree in a relevant subject with a doctoral degree or equivalent published work Evidence of being actively engaged in (i) Research or (ii) innovation in teaching methods or (iii) production of teaching materials Five years experience of teaching in under-graduate/post-graduate classes and/or post-doctoral research work with evidence of published work

Note Second Class would mean at least 50% marks in the subject or equivalent grade

Research Associate

Consistently good academic record with first or high second class (B) Master s Degree or an equivalent degree of a foreign University in the subject concerned

Note Initial appointment will be for a tenure period of three years extendable by another two years only In no case the tenure will extend beyond 5 years in all

Senior Programmer

(a) Atleast a second class (not less than 50% marks in the aggregate) Master s Degree in Mathematics Statistics Econometrics, Operational Research or Physics

OR

At least a second class (not less than 50% mark in the aggregate) Bachelor s Degree in Engineering from a recognised institution and

(b) (i) Atleast five years experience in Computer Programming at a recognised institution and

(ii) Knowledge of atleast one of the high level languages like Fortran Cobol Algol PL 1 and extensive experience of developing programmes for complex problems

OR

A Ph D Degree from a recognised institution in Computer related disciplines like Systems Programming Numerical Analysis Artificial Intelligence Theory of Computability and Theory of Formal Languages

Note Relaxation of any of the qualifications may be made in exceptional cases for the post of Senior Programmer on the recommendation of the Selection Committee

Junior Assistant-cum-Typists (French German)

Matriculation with minimum speed of 25 w p m in typewriting in the **language concerned**

Note Candidates will be required to appear and qualify the prescribed tests in General English language concerned and typewriting in the relevant language to be conducted by the University

Machine Operator

(i) Proficiency in running of Photocopying Machines

(ii) Ability to do day-to-day maintenance of Photocopying Machines

(iii) Three years experience in the trade

(iv) Education Middle Standard

Statistician

At least high second class Master s degree in Statistics with good academic record

Statistical Assistant

Master s degree in Mathematics or Statistics

OR

Second Class B A B Sc with Mathematics or Statistics as one of the subjects with 3-4 years experience of Statistical work

Special Desirable Qualifications
Research Associate

M Phil degree of University of Delhi or any other statutory University

Senior Programmer

(a) Experience of participation in training programmes in computer—related disciplines

(b) Intensive experience in System Programming on a Third Generation Computer System

Junior Assistant-cum-Typist (French German)

1 Advance Diploma or equivalent examination recognised by Delhi University in the language concerned

2 Some experience of handling books in foreign languages particularly in the language concerned office work

3 Preference will be given to those candidates who have good knowledge of English typewriting

Statistician

Previous experience of statistical work in a big organisation

The prescribed application forms can be had from the Information Section of the University either personally or by sending a self-addressed envelope (size 13 cm x 28 cm) with postage stamps worth Rs 45 P

The candidates will have to produce the original documents relating to their age qualifications experience, etc at the time of interview

Applications (separate for each post) accompanied by attested copies of Degrees, other certificates marksheets published research articles etc should be addressed to the Registrar

UTKAL UNIVERSITY

Advertisement No Estt I 886-C VI Plan A 6198 84 **Dated 3 2-84**

Applications in Seven copies are invited in the prescribed form alongwith attested copies of certificates and Mark lists of all examinations passed for the following posts in the Post Graduate Departments of the University on or before the **5th March 1984** All the posts are Temporary and likely to be made permanent

Sl No	P.G. Department	Post	Number	Specialization
1	2	3	4	5
1	ENGLISH	Professor	One	
		Reader	One	
2	HISTORY	Professor	One	
		Reader	One	
		Lecturer	One	With Sanskrit as a Subject at the Degree stage
3	POLITICAL SCIENCE	Professor	One	
		Lecturer	One	
4	ANALYTICAL AND APPLIED ECONOMICS	Professor	One	
		Reader	One	
		Lecturer	One	
5	ANTHROPOLOGY	Professor	One	Physical Anthropology Prehistoric Archaeology
		Reader	One	
		Lecturer	One	
6	BOTANY	Professor	One	Mycology or Microbiology or Plant Pathology or Cytogenetics
		Reader	One	
		Lecturer	One	
7	CHEMISTRY	Professor	One	Organic Chemistry
		Reader	One	Physical Chemistry spectroscopy and Structure determination
		Reader	One	
		For collaborative		Programme with Physics
		Lecturer	One	Theoretical Chemistry
	GEOLOGY	Professor	One	
		Reader	One	
9	GEOGRAPHY	Professor	One	
		Reader	One	
		Lecturer	One	
10	MATHEMATICS	Professor	One	
		Reader	One	
11	PHYSICS	Professor	One	Solid State Physics
		Reader	One	
		Reader	One	Electronics
		For Collaborative programme with chemistry		
		Lecturer	One	Electronics
12	STATISTICS	Professor	One	Applied Statistics
13	ZOOLOGY	Professor	One	Endocrinology and Reproductive Physiology or Cytogenetics
		Reader	One	Entomology
14	COMMERCE	Reader	One	
15	ORIYA	Reader	One	
		Lecturer	Two	
16	PHILOSOPHY	Reader	One	
		Lecturer	One	
17	SOCIOLOGY	Reader	One	
		Lecturer	One	
18	LABOUR WELFARE	Reader	One	
		Lecturer	One	
19	SANSKRIT	Reader	One	
		Lecturer	Two	

1 **Scale of Pay**

(i) Professor Rs 1500-60-1800-100-2000-125 2-2500 -

(ii) Reader Rs 1200 50-1300-60-1900 -

(iii) Lecturer Rs 700-40-1100-50-1600

2 **Age of Superannuation** 60 (Sixty years)

Essential Qualification

Professor

An eminent scholar with published work of high quality actively engaged in research About ten years experience of teaching and or Research Experience of guiding research at Doctoral level

OR

An outstanding scholar with established reputation who has made significant contribution to knowledge

Reader

Good Academic record with a doctoral degree or equivalent published work Evidence of being actively engaged in (i) Research or (ii) Innovation in teaching methods or (iii) Production of teaching materials

About five years experience of teaching and or research provided that at least three of these years were as Lecturer or in an equivalent position

This condition may be relaxed in the case of candidates with outstanding record of Teaching Research

Explanation

For determining good academic record the following criteria shall be adopted

(i) A candidate holding a Ph D degree should possess atleast a second class Master s degree or

(ii) A candidate without a Ph D degree should possess a high second class Master s degree and second class in the Bachelor s degree or

(iii) A candidate not possessing Ph D degree but possessing second class Master degree should have obtained first class in the Bachelor s degree

Lecturer

(a) A doctorate s degree or research work of an equally high standard and

(b) Good academic record with at least second class (C in the seven point scale) Master s degree in a relevant subject from an Indian University or an equivalent degree from a foreign University

Having regard to the need for developing interdisciplinary programme the degrees in (a) and (b) above may be in relevant subjects

Provided that if the selection committee is of the view that the research work of a candidate as evident either from his thesis or from his published work is of very high standard it may relax any of qualifications prescribed in (b) above

Provided further that if a candidate possessing a Doctor s degree or equivalent research work is not available or is not considered suitable a person possessing a good academic record (weightage being given to M Phil or equivalent degree or research work of quality) may be appointed provided he has done research work for atleast two years or has practical experience in a research laboratory organisation on the condition that he will have to obtain a Doctor degree or give evidence of research of high standard within eight years of his appointment failing which he will not be able to earn future increments until he fulfils these requirements

Explanation

For determining good academic record the following criteria shall be adopted

(i) A candidate holding a Ph D degree should possess atleast a second class Master s degree or

(ii) A candidate without a Ph.D. degree should possess a high second class Master's degree and second class in the Bachelor's degree, or

(iii) A candidate not possessing Ph D. degree but possessing a second class Master's degree should have *obtained first class in the Bachelor's degree*

Persons having secured marks more than the mid point of the prescribed minimum marks for passing an examination in the second division and the prescribed minimum marks for passing an examination in the first division by a University shall be deemed to have passed that examination in the high second class.

Prescribed application forms can be had from the Registrar, Utkal University in person on payment of Rs 7.60 including local sales tax (Rupees Seven and Paise sixty) only or by post on receipt of a Crossed Indian Postal order for Rs. 10/- (Rupees ten only) payable to the Registrar, Utkal University, Vani Vihar, Bhubaneswar-751004.

REGISTRAR

NORTH-EASTERN HILL UNIVERSITY

Lower Lachumeire : Shillong

No. F. 2-1/Admn/84

Dated the 19th January, 1984

Applications on plain paper are invited from Indian citizens for the post of Executive Engineers, Assistant Engineers, Junior Engineer, Work Assistants of the University in its Campuses at Shillong (S), in Meghalaya and Aizawl (A) in Mizoram, and Nagaland Campus Indicating names, address, date of birth, details of Academic qualifications giving the divisions and percentages of marks at each stage beginning from High School, experiences with details of institution, certificates, testimonials etc and No Objection from employers. The posts are temporary for execution of the University Campus Projects, some of which may be retained in the normal phase after the works have been completed.

The applications accompanied by Indian Postal Order of Rs 10.00 (Rs 2.50 for SC/ST) payable to NEHU, Shillong should reach the undersigned on or before **15th March, 1984.**

Candidates for the post of Executive Engineer, Assistant Engineer and Junior Engineer called for interviews will be paid T.A as per University Rules.

Shillong Campus
Executive Engineer : 2
Asstt. Engineer . 3
Work Asstts . 4

Aizawl Campus
Executive Engineer 1
Junior Engineer : 1
Work Asstt 1

Nagaland Campus
Assistant Engineer : 1
Work Asstt : 1

Scale of Pay

(i) Executive Engineer Rs. 1100-50-1600/- p m

(ii) Asstt Engineer Rs 650-30-740-35-810-EB-35-880-40-1000-EB-40-1200/- p.m

(iii) Junior Engineer Rs 425-15-500-EB-15-560-20-700/- p.m

(iv) Work Asstt · Rs 260-8-300-EB 8-340-10-380-EB-10-430/- p m

Qualification

(i) Executive Engineer Must have passed the final degree Examination in B E /B.Tech./B.Sc Engineering in Civil Engineering from a recognised University/Institution or must have passed Section 'A' & 'B' of the A M I E Examination of the Institution of Engineers (India) with an Experience of at least 10 to 15 years as Asstt Engineers or S D O (PWD) and 5 to 7 years as Executive Engineer in Govt Deptt /MSEB/ASEB/etc

Age Must not be less than 45 years and more than 50 years on 1st March 1984 Preference will be given to those candidates who have sufficient experience in the line for more than 5 years as Executive Engineer having the administrative capacity

(ii) Must have passed the final degree examination in B E /B Tech./B Sc Engineering in Civil Engineering from the recognised University/Institution or must have passed the Section 'A' & 'B' of the A M I E Examination of the Institution of Engineers (India)

Preference will be given to candidates who have sufficient working experience in the above line for more than 5 years

Age : Candidates must not be less than 21 years of age and not more than 45 years on 1st March, 1984 The maximum age limit is relaxable in case of candidates from the Central/State-Government and in case of specially experienced candidates

Junior Engineer . Matriculation or P U C must have passed the Diploma in Civil Engineering from the recognised Institute, having vast experience in Civil works construction.

Preference will be given to those candidates who have sufficient experience of more than 5 (five) years in the line

Age of the Candidates . Must not be less than 21 years of age and not more than 27 years on 1st March, 1984 The maximum age limit is relaxable in case of candidates from the Central/State Government and in case of specially experienced candidates

Work Assistant : Must have passed matriculation or H S.L C. examination with experience in the line.

Age of the Candidates : Must not be less than 18 years of age and not more than 25 years on 1st March, 1984. The maximum age limit is relaxable in case of candidates from the Central/State Government and in case of specially experienced candidates

Mrs. M.R. Mawlong
REGISTRAR

THE UNIVERSITY OF BURDWAN

RAJBATI : BURDWAN
WEST BENGAL
Advertisement No. 10/83-84
Dated 2 February, 1984

Applications in the prescribed form are invited for the post of Registrar, University of Burdwan in the aproved Scale of Pay of Rs 1500-60-1800-100-2000-125/2-2500/- The post carry dearness and other allowances, and pensionary benefits according to the Statutes of the University

Educational Qualifications & Experience

(a) **Essential**

(i) Uniformly good academic record with a B+Master's degree or its equivalent

(ii) At least 10 years' experience in Academic Institutions like University or in an Institute of higher learning of which 5 years must be in high level administration in a University or in an Institute of Post Graduate Study

(iii) Age not less than 40 years Relaxable in the case of exceptionally qualified candidate

(b) **Desirable**

(i) A Doctorate Degree or published research work of merit,

OR

(ii) High level administrative experience in a Government or Quasi Government organisation or a good background in administration and management in senior position

Provided that in the absence of suitable candidates having the required administrative experience, the essential qualifications pertaining to administrative experience required for the post may be reduced or waived on the recommendations of the Selection Committee if the candidate has been either a Professor/Reader/Principal for at least two years For candidates having the required administrative experience, the essential academic qualifications may be relaxed on the recommendations of the Selection Committee but the selected candidates must have at least the academic qualifications prescribed for teachers of Colleges

The choice of the Selection Committee may not necessarily be confined to those who apply formally.

For application form and other information apply to the Registrar with a self-addressed stamped (80 paise) envelope (9" x 4") with the requisite fee of Rs 5/- within **February 28, 1984.**

A.K. Chaudhuri
REGISTRAR

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